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CAMPING vs. THE GANG

A CONFESSION IN CONTRAST AND COMPENSATION

By A. E. Hamilton, M. A., Clark University, 1912

Three years ago I bought an abandoned farm in Maine; and where only poor corn, scrub apples and granite boulders had grown before, I started to raise a crop of boys.

Ponderous stone walls, miles in length over all, attest the years of human labor that made these meadows tillable and plantable to corn and a patch of potatoes. A jungle of hardwood brush—oak, maple, birch, beech and a sprinkling of hickory—has reclaimed the heritage of its ancestral trees; and where the great first-growth of pine once towered, ten thousand sapling upstarts are competing keenly to restore the oldtime grandeur.

The old farmhouse had for years sheltered tramps, stray fishermen, migrating lumber folk, porcupines, swallows and rats.

The big sturdy barn, plumb on its cut-stone foundation, upright in magnificent hand-hewn oak timbers, was actually mouldering away—the roof caved in, the floors rotted through, the walls open to the north wind of winter, and the heavy sills exposed to the rain.

A few months of work upon the house and I had as cosy a home as man should desire.

The barn, new-shingled and re-floored, was a paradise for howling youngsters. Rows of dining-room tables stood where cows had been stalled. A kitchen replaced the horse stables. On the ground floor appeared a carpenter-shop, garage and ample store-room. The hay-mows lent themselves to various crafts and indoor work and play. Robin Hood's Barn was ready to welcome its boys.

Three years ago thirty boys migrated here, coming from as far south as Georgia, and as far west as California. Two years ago forty came to grow among these rocks and pines. Last summer nearly sixty lads from seven to thirteen tanned here in the sun and wind, and went home living demonstrations of the kind of crop an old abandoned farm can yield in this rock-ribbed State of Maine.

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But why did I buy the place? Why am I here? What is it all about? I ask myself this in all seriousness, for there is little in the memoried record of my shifting life to augur boy farming.

My father died before I finished high-school. I found myself bossing a gang of Mexican peons laying tracks through the semi-tropics of Colima; then drawing pictures for an advertising shop in Mexico City; next cashiering for a wagon concern, accounts always short and eating into my small pay. I tried stenoing and keeping books for a mine. I ran a small coffee ranch for a while and then found myself secretarying first to a leather merchant, next to a bishop and later to a dealer in wholesale junk. The lure of lumbering took me to Michoacan, where I calculated board-feet in boxes, measured log-ends and wrote letters in Spanish that were dictated in Ring-Lardner English.

Demonstrating automobiles to willing riders and most unwilling buyers; soliciting printing for a publisher; transcribing the Bible in the language of the Chichimecas; waiting on customers behind a book-counter; collecting accounts for an agent of Stetson hats; selling gilt-edge building and loan securities; then a break for liberty, England, and education. The University of London had captured my academically amateur imagination. To sit at the feet of Karl Pearson and absorb abstruse biometrics became my immediate goal. But a midnight fog at sea, a mildly interesting but very thorough ship-wreck and a stranding on the coast of Virginia changed both my mind and my purse.

No American college would have me, because I hadn't finished high-school. At least no college before whose busy dean I laid my case. I read books and then found myself miraculously welcomed within the sanctity of a real and famous university "on trial."

I slept through lectures, read a very few books, wrote acres of letters about academic humans, asked infinite questions of good-naturedly patient professors in their "leisure" hours

and finally found myself crowned with a master's degree in psychology and education!

The world at my feet, I proceeded to lecture up and down the country in colleges, women's clubs, churches, institutes, nurses' and doctors' conventions; lecturing on heredity and how to bring up children! . . . where angels fear to tread.

Not content with talking about things of which I knew nothing, I wrote about them, too, and filled prideful albums with clippings of my printed word. Then I edited a magazine for girls; graduated to lengthy editorials for a New York daily, and suddenly found myself bounced into camping with boys.

I had written an editorial about two boys I had picked up on an East Side street. One played the violin outside folks' windows; the other wrote sentimental poems in a greasy note-book. Both played ball, swiped fruit and were real boys. My editor-in-chief, doubtless seizing his first opportunity to relieve the daily of my afflictions, told me my work lay in education, and with boys. He gave me an indefinite leave of absence to go camping, educational camping, in the Middle West.

I learned how not to camp, and how camps should most emphatically not be run. Continuing to write for my paper, I prolonged my leave and taught school a year. Three private schools suffered my amateur teacherhood until there came to me the vision of a farm in Maine, and a crop of boys of my own.

Luther Gulick it was, and Charlotte Gulick, his wife, founder of the Camp Fire Girls and pioneer in summer camping for girls, who brought the vision to me and opened up the possibilities of a profession still embryonic in the world, but one with large promise for America, and for education.

Gang and Camp

I learned to swim by being pushed into a pool of muddy, Mexican water. I learned the awkward dog-paddle, and the stinging belly-flop. For many years I believed I could swim and dive! Our gang called it swimming if we kept head above water, and a dive was the going in head first.

God put enough of the artist within me to make me thrill to the beauty of a straight, clean dive from a high place. I watch my youngsters now with a sense of joyous contemplation of the beautiful as they float off into space, backs arched, legs and feet tight together, heads up, arms outspread in angel-wing, swooping down to "the cool silver shock of the lake's living water" with the clean stab of a feathered arrow.

Parents of my summer boys stand on the dock with me watching. They wish, with me, that an opportunity to learn to swim and dive *right* had been theirs in boyhood. I tried to learn to dive at twenty-four, and broke an eardrum in the process. Mrs. Gulick learned the back-dive in good form after she was thirty, but most of us are in William James's category of the folks whose co-ordinating mechanism has pretty well set at thirty and we may as well get what joy we may out of seeing youngsters do easily what we cannot learn to do however hard we try.

And there is a compensation here. While I cannot dive, I can teach diving, and I take a rightful pride in the young alumni of my teacherhood. And I can gather here at camp the kind of men who can teach things *right.*

I learned to shoot with an uncertain pistol bought from a pawnbroker and kept hidden under my mattress at home. I learned to shoot aiming at bottles and cans along the roadside, little considering who might be crossing the field beyond. Later my gang borrowed a big brother's gun and we practised nipping off corn stalks in a farmer's field until an old lady emerged, cursing us Mexicanly for having perforated her market-basket as she gathered maize for dinner.

So, in memoriam of that market basket, a councilor has built as neat a rifle range here at camp as exists anywhere. Boys stand, kneel or lie in the shady range-house, shoot at targets set against the precipitous side of a sixty-foot bank and never need go in front of the firing-points for any purpose whatever. Their instructor is a man who knows rifles from the dawn of the history of gunpowder, loves rifles as one can love a good dog and is gifted with a big enthusiasm for teaching boys what a wonderfully safe and reliable instrument a gun can be.

I learned to drum by beating two sticks to rhythm. A few tolerable marches, three or four calls, and a sad imitation of the roll is my repertoire. Yet I love drumming, and delight in watching a boy master this most primitive of musical instruments. I learned all wrong myself, and my co-ordinations set. But I can teach six-eight and two-four, set a lad on the right and the best road to rolling, and I share a deal of the joy that comes to a lad who awakens some bright day to find that he can really drum!

Drawing is second-nature to me, and I earned a paltry living by my brush and pen at one time until a man who really knew something of line and form came along and took my job away. Today I am still trying to learn a bit about the principles of perspective, massing, spotting, composition,

proportion and various technique. And as I learn, I enjoy sharing the process with these lads.

They illustrate letters home, paint on birch-bark, decorate their canoe-paddles with strange symbols and picture-stories, illuminate their log-books and learn something of the ways of charcoal, pencil, crayon, pen and ink and colorful paints.

Baseball I played on city cobblestones and in back lots until swarthy Aztec policemen moved us along. Tag—we ran through people's courtyards and over the flat-tiled roofs of Mexico City.

Here, at camp, the boys have laid out their own ball-field and as yet have set no limits to their limit for hare-and-hounds, for they may range a hundred and seventy acres of forest and field, hill and valley and marsh without finding the familiar sign about no trespassing allowed.

Three of my gang in Mexico were arrested, fined, jailed for digging a cave in the walls of an old fortress. My father found me sitting behind a grated door in a typical Mexican calaboose for digging a hole through a very ancient adobe wall. The mounted rural police drove us out of a romantic canyon on Government preserve where we had hollowed out a robber's den.

Here, my lads and I and our big-brother councilors dig caves, tear down walls, construct secret shacks deep in the woods, build tree-houses and little log cabins; but the thrill of the police is not ours. We invent good substitutes, however, and our war-games, our raids, our secrecies and the discovery of secret hiding-places bring us romance and adventure enough to fill many an eventful day.

To our gang, an axe was for hacking ugly holes in the bark of trees to indicate a trail and for chopping down a tree wherever we dared for the sheer fun of seeing and hearing it fall.

At camp an axe is a constructive tool, to be kept keen-edged and bright and safely sheathed, and used for a definite purpose. There are trees that should be chopped down. We discuss the reasons why beforehand, and learn the rudiments of forestry. There are trails to cut, but we plan them in advance and carry through a thorough job. There is a right way to cut and split firewood. There are many ways Dan Beard has showed us in the building of a shack.

And it comes home to our boys that it takes fifty years for God to make one of these straight pines that can be cut and killed in fifteen minutes of boy axemanship. Our lads learn to think before striking, and I believe many of them learn to love trees somewhat as Joyce Kilmer loved them when he wrote:

I think that I shall never see
A poem lovely as a tree!

We boys in Mexico carried bowie-knives, Spanish daggers, long-bladed case knives and an occasional stiletto such as may be found in side-street pawn-shops of Mexican cities. We seldom used them, but, like the wonderful bull's-eye lanterns of Stevenson's youth, we carried them ever with us under our coats; mysterious, symbolical.

Here we have prizes for the best care of a knife through the summer, for the best knife-craftsmanship in making wooden spoons, forks, arrows, bows, swords and boats. To prize a knife as a great possession, to keep it keen and bright, to use it rightly and even to play a good game of mumble-de-peg with its leather-punch blade is a bit of fundamental education, and I am hoping some of our boys do really find it here.

Chisels, too, and planes and augers and brace-and-bits, saws, hammers, square and triangle, plumb-bob and ruler have their rightful places with us. Last summer they helped make boats, and one model boat was so carven and painted and varnished and fitted that we sent it out to visit neighboring camps, then crated and shipped it home with the pride of our camp shining from it.

"For by way of the hand the mind still travels the enticing road to self expression and self fulfilment, and to that most priceless sort of happiness which is poised upon itself."

And work! My good-natured, generous-hearted father believed in working for me. Himself a farm-lad and hard-worked in youth, he was glad that he could send me to school early and save me from hard physical toil. I never knew the meaning of work and responsibility until he died, and I was left to hunt a job for myself. Much later, the meaning and value of work soaked itself into my mind and I saw it as a living part of any true way of education for a boy.

The lads here work at least a part of the day. Work, I mean, that is not play. Sweeping floors, washing dishes, policing the grounds, stacking wood and lugging water, making beds and clearing brush.

My first summer here I told the millionaire father of one of my boys that I was going to lay pipe and pump the water from our spring. He was looking across the field, watching his boy struggling with a heavy pail of water.

"Well, when you get those pipes laid and the pump in, let me know and I'll take Jim home. We have running water in Chicago," he said. I have not laid the pipes to the spring.

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Did I want a dime, a quarter, a dollar? My father dug down into his pocket and handed it to me. He did not ask what for, why, or request an accounting. He had it to give, it was mine to spend as I liked. I know what effect that had on my sense of money-value. I am fortunate to have found sufficient since to save me from utter thriftlessness in money matters.

At camp there is a bank. Boys may have an allowance from home, which they bank and draw upon by personal check. But first we talk matters over. Is a thing worth drawing a check for? What does that check mean to the bank account? What, then, cannot be purchased that might be wanted? How about saving up for a thing more really worth while than the desire of the moment?

But better still, a boy may earn a little money. Picking berries, doing special chores, serving camp in certain occasional ways may mean not only sensing labor, but labor value in terms of money. When a boy has picked a quart of berries at the current rate of purchase in the country, the value of twelve cents is apparent to him in terms of work. That all money represents labor, and that labor is the basis of life is a conception that best dawns upon one who has measured money in terms of work, as well as work in terms of money.

We are not here to teach economics, but there is opportunity for getting across a few simple fundamentals in a very boylike way, especially concerning the money-value of the work of one's hands.

Sam, our mainstay of real work, is a type of old-fashioned American stock that I want our city boys to know. His species is obsolescent perhaps, but his type and tradition are constructively rare.

Sam is big and strong. He works hard, long, thoroughly and with a conscience. He is clean-spoken, generous-hearted, patient with "kids" and altogether likeable. He can weld iron, split stone, cut pipe, fix pumps, build houses, make tables and chairs and flat-bottomed boats. He cuts our ice and saws our wood in winter. He watches over our horses, hauls our loads, repairs our breaks, builds our bungalows and tent floors, shingles our roofs and lends his strong hand wherever it is needed. He farms his own garden, milks his own cow, and puts wife and children and his own home first in life's considerations. I like my boys to know our Sam. He is a worker.

Team-work? The only team-work of my boyhood was the organized mischief of the gang. To outwit the police, to raid

the stalls of the Thieves' Market behind the national palace, to do battle with rival gangs, and to make our teachers (day and Sunday) wish they had taken to tailoring or life-insurance for a living; these were our reasons for sticking together, for working as a loyal group together.

Now, I watch the sweep of our great, steady, sturdy war-canoes, plowing over the shimmering morning surface of the lake, manned by eleven sun-baked boys apiece, boys singing at their paddles:

> Stroke to the song, brother,
> Stroke to the song
> And it's stroke, stroke, speed-her-along,
> Swing to the song, and you'll never go wrong!
> Shoulder to shoulder we'll speed her along.

Ship-paddles, cross-rest, ready, stroke, stroke, ready, back-water, lift-paddles, salute, ship-paddles, cross-rest, ashore! All to the cadence of their own canoe chantey. Grays and Greens out for competitive canoe-practice. No taxing race, no straining of nerve and muscle for a goal here. The race, the strain, the tax has its place in all boyhood as in life, but at camp it must be the exception, not the rule. We compete as teams in doing good work, thorough work, thorough play. There is no setting-up exercise in the world like war-canoe practice before breakfast. Practice for the glory of the team, for the honor of winning, for the honor of losing with a smile from a sportsman's heart.

Obey first, discuss afterwards! This camp motto comes home to a boy with all the weight of reason and justice after he has experienced what possibilities there lie in disobedience to a captain's orders in a boat. In obedience to law there is the fullest liberty. A hard lesson to learn without concrete experience. Here we make experience vivid, but safeguarded, as in the laws of canoes.

I never canoed in boyhood. Now, to paddle silently through the grey marshes by moonlight, down the widening creek suddenly to slip out into the silvered expanse of the lake, a small boy holding his breath at the beauty of it all up in the bow . . . this is compensation for what was denied me! Here I share the long-delayed thrill of adventure, of dramatic romance with these lads to whom it is as wonderful an initiation as it would have been to me.

To learn how friendly, how safe, how tractable, how easily, quickly responsive a canoe can be when you have mastered it is an educational experience and an emotional joy that should be the heritage of every American lad in the land of Hiawatha.

Tippy? Dangerous? Treacherous? Yes, until you know its ways and whims, and how marvelously it responds to the turn of a paddle, the shift of your weight. Not to avoid difficulties or dangers, but to know how to meet and surmount them is the lesson camp holds here, as throughout its more strenuous activities.

And sailing! I read about sailing in my ganghood days. I started out one night to run away with a friend, build a raft at Vera Cruz and *sail* to Texas. My mother found me trying to open the big *saguan* gate with the wrong key, sent me gently back to bed, and when morning came my enthusiasm for the raft sail had sufficiently subsided to leave me tractable for another week or two.

"But when you introduce a boy to a sailboat," says Mr. Yeomans, "you do him a great service. First because the elements, winds and water, are exceedingly important things to get on some sort of terms with—to recognize their humors, their playfulness and their rage, and the premonitions of each. Second, because the tradition of the sail is an old and a very fascinating one, and the more you know of it, the more the construction and performance of a ship gets into your essential interests, the more likely you are to respect everything whose usefulness has made it beautiful—which grew in beauty as it grew in serviceability."

I read this paragraph one spring. Next summer I introduced my boys to a sail-boat. Since then we have had sailors, pirates, traders, explorers, discoverers and "seafaring" adventurers galore. Treasure Islands now dot the maps of our neighboring lakes, and where the sail-boat cannot portage, sailing canoes can, and our Eggs, Pollywogs and Frogs aspire to the rank of Bullfrog, to be able to sail canoes by themselves. It takes time, effort, patience, persistence and a deal of dogged determination to work oneself through the stages from Egg to Bullfrog, but the superlative joy of sailing a canoe is felt vicariously long before the coveted honor is won.

Horses, too, may bring an element of danger with them into the life of a boy. I vividly remember being dragged, foot in stirrup, over a cobbly street of a Mexican village, across a stone-flagged courtyard and into a dirty and splintery stable—all because I had not been taught how rightly to dismount a horse.

The boys at camp learn to mount and dismount in the way our American cow-boys have learned is *best*. A real cow-boy, as fine a lad as ever hit our roadway here, came to camp, showed us how, set the stamp of his personality and character here, started our traditions aright; and now we look forward

to his return to us as ancient peoples have looked for the return of a departed deity.

And the boys learn to saddle, bridle, unsaddle, unbridle, rub-down, blanket, water and feed their horses. We are proud of our horsemanship chart, graphically showing the progress each boy has made in the fundamentals of horsemanship.

There is a spiritual experience in learning to care for, and to love a horse. I don't know what it is, but I feel it in the atmosphere of friendliness that has grown up between boy and horse. I leave it for others to define or analyze. It simply *is*.

Physical courage, too, literally buds and blossoms and blooms into full flower in some boys who learn the ways of a horse from the first timid approach to his head with a bridle, to the final demonstration of rough-ridership on field-day. I have watched this process in case after case. The only parallel I know from my own experience in life is the watching of a night-blooming cereus open by moonlight in a Mexican garden.

Boxing, too, brings out elements of physical courage and of good sportsmanship that are good to behold. And there is, there must be, a real joy in the mastery of right boxing technique. I myself have only fought with bare fists, hit or miss, and hit anywhere my blow might land. In our gangster days it was not a question of knowing how, but a matter of sheer bulk, arm-reach and endurance.

Our boxing instructor at camp loves boxing so much he writes poems about it and has worked the song of the hard-fought fight into his camp symbol and name. But he has the finest feeling for the qualities of sportsmanship, of courtesy, of fair play, of cheerful losing, qualities which under right conditions dominate a bout and render the cruder fundamentals subservient.

Leadership

And so with the development of the body. Myself rather skinny and small-jointed and muscled, I have always delighted in fine physical form in others. The grace and beauty and versatility of a sound, responsive, human machine is wonderful to contemplate. Such a machine one of my boys built.

Thrown into my English classroom at a boarding school, by a pompous and burly principal, he resolved to get strong and "knock that pedagogue's block off." He asked me how, and I set him to training, exercising, boxing, and reading books on physical culture. In three years' time it would have been rather ill for that fat principal had the lad's enthusiasm for chastising him kept pace with his physical development. As

it was, the boy was all smiles inside at feeling what he could do if he would!

Now, this same young man, a most trusted councilor, delights the boys by picking me up, throwing me high over his head and whirling me around "aeroplane fashion" and otherwise using his chief as an animated dumb-bell.

Many of the younger lads swear by "Matt," and more than one father has told me that the example of our Strong Man is so potent that, when other ways fail, a deal can be done with a boy by asking him if Matt would not do so and so, or citing what Matt *would* do, or leave undone.

This contagion of example is kin to that contagion of character that is the keynote of Camp Life.

To gather young men here whose build, mental, physical, spiritual, is such that their appeal to the dawning imaginations of these younger lads will be constructively vivid and valuable —that is my major job.

And to train, with their help, as many as we may of the youngsters in the ways of self-discipline for leadership is a capital stone in our program.

It is glowingly wonderful to me how responsibility backed by encouragement begets leadership and makes for the education for Authority which Mr. Sharp has so lamented as lacking in our schooling of American youth.

Big brothering, setting an example in leadership, was an art utterly foreign to my boyhood experience. A big brother, as a Councilor or Scout Master, could have modified the morals of our gang without the slightest consciousness on our part that we were being changed. Our leadership was the spontaneous, shifting, opportune leadership of the mob. Our morals were manufactured to meet our desires.

Had thieves stolen goods from others? Then it was only right and just that we should relieve the thieves of their stolen goods. We went straightly from Sunday school to the gorgeous pageantry of nick-nacks displayed on Sundays at the Volador, or public market, where pick-pockets, petty burglars, dishonest servants, tramps and sometimes honest men or women brought things to sell.

Imagine the magnet to a boy's mind! Piles of cutlery, pistols, arrow-heads, pipes, books, bullet-moulds, cartridges, military buttons, idols, pictures, beads, raw amber, candlesticks, swords, rugs, saddles, tools—all scattered loose or piled high on woven mats upon the cobblestones. Easy prey! We filled our caves with pilfered junk and, as we always escaped scot-free, we believed Gabriel must be looking the other way, and God unworried by such trifles. The echoes of

Sunday school did not reach us within the great stone walls of the Volador.

Here, too, we bought candy. Candy exposed to all the four winds of heaven blowing in the dust from all the city streets and from all the houses whose windows opened on those streets when brooms were cleaning within.

I think of those dust-encrusted sweets today, when I welcome our Sunday chicken from a neighbor farmer, count his fresh white eggs, bargain with him for lettuce, corn, greens and all that farms hereabout produce in moderate abundance. And of our rules against candy between meals (tradition, I should say, not rules)—I wonder that I survived to be writing this confessional today!

Sunday school and day school taught us much lore of Palestine and multiplication, but nothing of physiology or germs.

And I think, too, as I watch our patrol-boat at swim time, and the statuesque figures of watchful lads on the marking rafts; the white line of bobbing buoys marking the limits for those who can swim and those who cannot—think of my chum Francis Kain, eaten by sharks at Vera Cruz because he would dare the water on the wrong side of the pier.

We may seem finicky at camp, but eternal vigilance is the price we pay for the clean record we must have in safety and health of our boys.

A camp physician, camp nurse, and camp mother share my responsibility, but it all comes back to me . . . each cut, bruise, burn, sliver, blister, headache, tummy-ache and incipient cold. Prevention, prophylaxis, antisepsis, the whole gamut of personal and camp hygiene must be mine. Nothing of that in my own little days, all learned anew since I started camping, but fascinating none the less and imperatively essential.

The Big Brother Councilors must help. They must watch and check up on their lads' digestion, elimination, tooth-brushing, bruise-reporting, first-aiding. They must see that he is warmly wrapped at night, that he dries and warms quickly after swim. He must even watch nails and neck and hands for cleanliness' sake; see that beds are rightly made, laundry sent, rents and tears brought to the patience and smile of our camp mother. It takes considerable of motherliness in a young man, this, and yet there must be overwhelming manliness of character—still, folk wonder why I have to look so long and fight so hard to bring together here the right sort of stuff for a Council force!

Friendliness

On those few occasions when I went to church after Sunday school instead of to the Thieves' Market, I heard a great deal of talk about religion and about God. Religious influence touched me but little. Now and then, through life, some magnetic, dynamic, fully charged personality has crossed my trail and made me feel what a power real religion can be within a man or woman. But such persons do not talk much about God, or about religion. They live it.

So we do not talk very much at camp. Sunday differs from other days in that we rise a little later, have more time for doing things, fewer things that have to be done, more leisure to do as we like. Our time for singing together is longer in the morning than on week-days. Story-Hour after dinner is, too, and Sunday stories are usually from the stirring tales of old, God-fearing men and women who fought, pioneered and adventured for a vision.

We write letters home, remembering the folks and sharing with them somewhat of our life at camp. We walk the open road, the woods, and climb the hills. We get better acquainted with the trees, and know many of them by name. We have time to watch porcupines lumber up the hard-pine trees and chew the bark. Squirrels, chipmunks, snakes, crows, spiders, cocoons, the heron who visits the swamp, turtles, brook-trout and, once in a while, the little red fox come into our lives.

Evening brings sunset and the evening star. We turn toward the circle of baby pines that rim the Council Rock. Here among the little bushy trees, with a great wall of pine-gloom rising behind them, we gather in a circle around the pyramidal fire.

A Firemaker (coveted rank held by a very few) has laid the sticks of maple, beech, birch, red-pine, white-pine, oak, spruce and fir. A simple ceremony marks the lighting of the fire.

One by one the Big Brothers speak out some happy thing they have seen done, or heard said among the boys during the week. The cheery things, the sportsmanlike things, the unselfish things, the generous things that have marked the week pass in a very personal, intimate review.

There is singing together. Happy and reverent camp songs, written especially for the fire, sung to the finest old tunes we know. On week-days we are hilarious in our singing. The days are stirringly punctuated with music, and many an evening with valiant drama and the spoken word. But there are songs for our Council Fire that we treasure for this time alone.

A quiet story by the firelight as the flames die down and embers begin to glow. Then we sit a little while before rising for our good-night song.

Arm in arm and hand on shoulder we form a friendship fire-circle. We look up above us at the multitudes of the heavenly host and repeat aloud together the simple prayer that has lasted down the centuries and will last down those to come. We file out toward our tents and cabins. Each boy takes my hand as he walks by, and in the feel of his handshake I know that something worth while has gone home to him. I do not know what. I do not analyze. I do not describe. It is there; I feel it, we all do.

Boys' parents often ask them, "What did you like best at camp?" and I know that the answer is very often, "Council Fire." To the question, Why? they have no ready answer. A composite would probably be, "Oh, I don't know, you just kinda feel good inside and toward everybody, and I like the fire."

I think we come close to Nature, and close to each other. I like to think of Council Fire as the heart of camp. I like to think of camp as the place of learning to make fine friendships, a place of happy, natural human relationships.

Old Chief Timanous, as the boys called Doctor Gulick while he lived here with them, and as we now remember him (for Timanous means Guiding Spirit), used to say:

> There seems to be something almost magical in the common things of life to draw people together. Doing those things which all the people of all the world have done together; experiencing the common feel of the earth under one's foot, the look of green trees, the touch of fresh water; cooking in the open; sleeping on the ground about a camp-fire; carrying the pack; standing the strain of the long trail—somehow human nature seems to come right to the tip and look around under such conditions as these. You somehow don't need to become friends—you just are friends. It seems as if sham, insincerity, false courtesy and other pretenses are swept away by the sweat that pours from the body and you and he stand before each other for what you really are. Under such conditions souls fuse.

The fusing of souls. That, perhaps, is the capital thing that happens at camp between boy and boy, and boy and man, and man and boy.

Canoes, boats, sails, paddles, horses, saddles, ropes, ladders, tools, shovels, wagons, animals, lumber, ammunition, rifles, modeling clay, pencils, paints, crayons and a thousand little items that we handle and use and need. These we must have.

Shacks, bungalows, tents, the great Robin Hood's Barn, our farmhouse, the horse-barn, the spring, beach, woods, rocks, brook, swamp, playfields. These have their part in camp.

The old abandoned farm is growing a new crop, and we need it and the machinery we have brought here for our purpose. But it is the privilege of growing this crop that keeps me here, the privilege and the responsibility and the sense of growing something, building something, contributing something. I never got this feeling from selling stock, or automobiles, or bossing men, or turning over papers in an office for somebody else. I have it here.

Here, without the incubus of college entrance requirements, without the critical eye of a principal, without moss-grown traditions, handed-down curricula and ancient tabu, we of the new profession of Camp Directors are free to work out our part in a new educational experiment in America.

Training of the will through *doing*, guiding a lad's feelings toward things wholesome and beautiful, helping the unfolding of emotions hardly touched in school, almost never inside the walls of a church and none too often in the homes of our city-born boys, that is our job. Home, church, school play their own appointed parts, and sometimes play them well, but at best they leave untouched whole areas of possible mental, physical and spiritual experience which outdoor living together under a positive impulse and plan can bring.

It is for us to guide will, feeling, imagination and emotion into the most constructive channels that the Great Outdoors affords, channels that, if I may borrow a phrase from the mother of Edward Bok, will enable us through our boys to "Make the world a bit more beautiful and a better place because we have been in it."

THE COMPARATIVE INDIVIDUAL PSYCHOLOGY OF DR. ALFRED ADLER

By May Jacobs

In the preface to the second edition of his work *Ueber den Nervösen Charakter* Adler writes: "The earnest reader will, I hope, reach with me the point of view that enables us to discern every human soul in single pursuit of an ideal of superiority, so that motions, traits of character, and symptoms point inevitably to something beyond themselves. The knowledge thus won will lay upon the reader indeed a task for life: to press forward with the demolition of the struggle for power, and with the education to fellowship (*Gemeinschaft*)."

"In our sense, to see and know a man means to extricate him from the aberrations of his sore and lashed-up albeit futile straining after likeness to a god (*Gottähnlichkeit*), and to make him inclined toward the invincible logic of the life of men together with other men, toward *the feeling of fellowship* (*Gemeinschaftsgefühl*)."

And in the preface to the edition of 1922:

"Our Individual Psychology teaches us to comprehend the life of the human soul as an attempt to take a position toward the demands of social life" (life, i. e., with one's fellowmen). But "the nervous man lives and exerts himself for a world that is not ours. His contradiction of absolute truth is greater than ours."

In these few sentences, rightly understood, we have the key to Adler's analysis of neurotic and psychotic disorder, the key to his method of correction; the standard too set by himself whereby to measure the social worth of his system.

No man lives content. Here one recognizes a weakness that he is stirred to overcome. Aware of some limiting inexperience, ignorance, insufficiency, intellectual or physical, he strives to correct it; or, again, he may feel some painful lack—of a congenial home, of money, advantage, beauty, health, a lack which perhaps it lies quite beyond his powers to make good in kind, and so he exerts himself to win compensation in other kind, through scholarship it may be, or faithfulness and friendliness, or along ways of skill in science, virtuosity in art. Insufficiency, limitation, the *feeling of*

inferiority (*das Minderwertigkeitsgefühl*) in one form or another Adler sees as the thorn that goads to all development. Development and progress are the normal outcome of the instinctive discontent of man and his instinctive impulse toward compensation.

Now, in all of this Adler discerns two elements. Feeling himself inferior to his neighbors whether in this regard or in that, the individual is stirred not merely to equal but so far to excel those others that his superiority shall assure for him mastery of the situation; but likewise strong within him lives a social craving, an instinct of fellowship, the feeling that life is a thing essentially of human relationships. Experience teaches that his fellowmen are endowed quite similarly to himself with these two instincts of egotism and of fellowship; and it becomes evident that consequently one must in some degree compromise, modify, adjust one's egotistic desires and impulses in order that all these countless aspirations shall lead, not to conflict one with another but to that co-operative balance of mutual give-and-take which alone can harmonize and most satisfactorily fulfill the demands of both these instincts. That is, to put it in a word, the firts mentioned normal desire to achieve superiority above the sense of any lack becomes modified, "corrected" by the equally normal feeling of fellowship; so that the healthy function of compensation has ceased to be purely egotistic and competitive and has become instead a positive, active, constructive development that contributes in some way or other to the solidarity and stability of society—to fellowship. This involves the sacrifice of much that might be selfishly gratifying; it involves patience, flexibility toward the unforeseen as well as steadiness of aim; it involves acknowledgment, too, of the rights and the achievements of others, recognition of responsibility on one's own part and of the chance of failure as well as of success. It means, in short, the acceptance of life as it is, of the logic of natural law and human conditions, even while one is trying to weld something new out of these given materials.

It is *normal* then to be stirred by the handicaps of one's being, by one's sense of inferiority or lack, normal to set for oneself an ideal of compensation. But it is *neurotic* to mistake the nature of this ideal, to lose sight of the fact that it is only a "fiction" (Hans Vaihinger: *Die Philosophie des Als Ob*) after all, a plan of action, a guide through the confusion of reality, and that it can fulfill its purpose only in so far as it is kept flexible to the logic that holds invincible of things and fellowmen and of one's self—a man in every situation

limited and never capable of rising to the dreamed of absolute supremacy and absolute security, to *Gottähnlichkeit.*

Yet this last, says Adler, is no exaggeration of the essential albeit unconscious desire of the neurotic; and this extravagant and unattainable demand is the factor that throws him out of life, or at the least poisons every relationship upon which he would enter, keeps him restless, afraid and discontent, drives him inevitably into all those conflicts that everywhere characterize the "nervous" individual. Not that he is worse off than the rest but that he has become habituated to emphasizing any inferiority of his person or position, and in response to this feeling of inferiority has set before himself an ideal of absolute gratification; not that he is incapable of doing his part in life but that he is unwilling to take the risks, unwilling to submit to the logic of every human effort; not that he has no strength, or is incapable of learning and of doing, but that he makes his weakness the basis of his demands upon life instead of the starting-point of patient endeavor—this is what Adler sees as characteristic of the neurotic attitude. It is the history of this attitude that constitutes his special contribution in this field of investigation.

The small child is made aware in numberless ways of certain differences between himself and those about him. He is born dependent. His earliest experiences record his need and helplessness uttering themselves in instinctive expressions of pain, and the winning of satisfaction through the attention and ministrations of others. The infant's weakness constitutes his rights, his power.

Gradually he learns to compare, comes to see himself as smaller than others, to feel the limitations imposed upon him by reason of his smallness, his inexperience; and he feels somehow instinctively the superiority of mother, father, an elder brother or sister. One sees him standing observant, then attempting to do what those others do. In play he will take the rôle of father, policeman, teacher, hero of some sort, will be the center and master of his little world. In all of this Adler discerns the dynamic principle of the *Wille zur Macht* (Nietzsche) as offering compensation of the *Minderwertigkeitsgefühl.* An instinct is there to escape from the insecurity and uncertainty of inferiority of any sort, to attain security, a sense of power. Impelled by this instinct the child is unaware at the start of any right of others. Only through experience, through education that leads it to experiment with and to win confidence in its own abilities, does it reach little by little a sense of its own responsibility in the problems that confront it, a recognition, too, of its duties

toward its fellows. And it learns that the way to overcome its limitations lies not in pretense of greatness but along lines of self-development, self-restraint, courage, risk of failure as well as hope of success; and that the way to satisfactory relationship with parents, teachers, playmates lies no longer in childishly expecting attention and praise and favor, but instead in making its own contribution toward the common good. And as this development goes on, the goal of greatness becomes modified in the respect that the emphasis no longer falls upon the comparison of himself with others, upon the question whether he himself is first, most powerful, clever, successful, but more and more upon the doing of his best; and along with this comes the ability to acknowledge in generous comradeship the achievements of others than himself.

But, says Adler, the neurotic lives in another world, in a world namely of which he and he only must be the center and supreme. The praise accorded another is pain to him; the achievement of another, his personal loss. For him the ideal of compensation is no healthy incentive but an obsession; winning is more than doing, prestige has become his god. But why? The child who by reason of long-continued illness grew to feel himself far more significant than the others as the center of family solicitude; the only child, pampered and indulged, grown accustomed to having his will without question or delay; the eldest, idolized and too tenderly reared, warned, guarded until the birth of sister or brother, then feeling himself neglected, shoved aside; the youngest child petted for his very helplessness which then he learned to regard as his special power of winning his way in an environment where every other was superior to himself; or, on the other hand, the child that was always neglected, treated without regard, made to feel himself superfluous, unloved, looked down upon by his elders; or the one that grew up in an atmosphere of constant tyranny, in a home where the word, the standard or opinion, the personal authority of another—more usually perhaps the father—was an oppressive law against which there was no appeal;—such are the children, such the situations that tempt to neurosis. For in all of these situations the child comes easily to a false sense of values, to overemphasizing the rights and privileges that one would have in life against extraordinary obligations that others should owe to him; to counting attention he may win from others as of more importance than responsibility on his part; to valuing safety above living, absolute safety with its negation of risk as against living, which, to be full, must always

be a constant testing of oneself, a constant experiment with elements more or less incalculable and pregnant with risk.

This is what Adler means when he says that the neurotic must be won to acceptance of the logic of life, to play his part in this world as it is in relationship with other men as they are; with full acceptance, too, of himself, the individual that he is; with acceptance of these facts and conditionings as the material out of which to weld his best. The normal man will undertake to change the facts through effort or work; the nervous man, constantly under the obsession of his ideal of perfection, may set out indeed with burning hopes that without the aid of patient endeavor fall soon to ashes. What distinguishes the normal from the nervous man is that the former is flexible and patient, capable of modifying his ideal into harmony with the attainable, whereas the nervous man makes of his ideal an idol, in whose worship he offers up every actual chance of life. Hindrance, obstacle, difficulty are to him obsessive forces hostile to his egotistic dreams; he lives in constant rivalry with the universe. At heart he has remained the little child he was, demanding still, all unconscious of the scope and significance of this attitude, the favor and privilege due to helplessness. His ideal is a cloak for his deep-rooted sense of inferiority, for the feeling that in actuality he fails to measure up to those about him. But then identifying himself with the ideal and not with the bitter actuality, he consoles himself for the failure of his life through depreciation of the object he must otherwise labor and risk to win, and of his rivals as well. In this tendency to depreciative criticism Adler finds one of the most flagrant characteristics of the neurotic disposition. It is a cloak of cowardice; *Wille zur Macht* has become *Wille zum Schein.* With all interest fixed upon securing his own prestige, the neurotic can win his fancied superiority as readily by lowering the level of his rivals as by raising his own. True, the expression may assume deceptive form, as when under guise of charity and generosity one exalts his self-esteem upon the basis of the praise and gratitude that he wins. But here, as indeed in all those conspicuously self-contradictory traits of nervous people, Adler sees merely different techniques chosen, developed, for the most part quite unconsciously, as in the one case or the other best adapted to win for the individual the craved prestige and mastery, at any cost the show at least (*den Schein*) of power.

Excited ambition or sluggish dread; keyed-up struggle to become the center of wonder, or "nervous" retirement, seclusion, shrinking away from the contests of life; the open

tyranny of the neurotic who harshly asserts his own demands, or the "nervous" invalidism that through headache, sleeplessness, nervous indigestion, a thousand ills and fears and woes wins thereby (seemingly without intention, through wholly innocent "suffering") sympathy, consideration, the subservient yielding attention of his environment:—all these are only the instinctive reactions of infancy, found once to work, unfortunately then not corrected through the education to fellowship but instead developed and retained as weapons of self-assertion, of exaggerated and unrestrained egotistic cravings. "Nervousness" then in all such phases is only an expression of negativism; it is at once a refusal to adjust oneself to the actual and an excuse for this refusal on the ground of illness, sensitiveness, suffering.

Männlicher Protest (male protest) is Adler's term to characterize the neurotic attitude. *Ich will ein ganzer Mann sein* ("I will be a man,") in the sense, i. e., of enjoying power, authority, superiority to all restraint, freedom from all will except my own. It is an ideal born of the experiences of childhood when the father stood as personification of highest power; established through much of the teaching and in emphasis and custom of our civilization, in which it is so often taken for granted that man is superior to woman. And if this ideal of superiority is opposed by the "logic of life" then the neurotic resorts to the illusions of his neurosis, to his inactive but depreciative egotism, the martyrdom of his "suffering." If his ideal of dominating as a "man" is unattainable, then at least through excuse of his neurosis he will still accomplish his purpose of refusing to bow before what he conceives to be the hostile conditions of reality, he will save himself from comparison of his own active and perhaps imperfect achievements with those of others, rescuing thus, as by a sort of converse rule of default, the illusion of his dreamed-of superiority. The neurotic with his exaggerated feeling of lack and his correspondingly exaggerated ideal of superiority that shall be sure beyond challenge of any rivalry, covers and excuses to himself (unconscious of these workings of his mind) the fears inherent in this attitude through plea of illness, i. e., through his very neurosis. Power, security, invulnerability, those qualities and privileges that he conceives of as pertaining to a "man" are his ideal, the goal (unconsciously) of his neurosis quite as much as in case of any active aggression on his part. Man is his symbol for power, woman for inferiority. It is this symbolism rather than the direct facts of male and female that Adler finds at the root of the neurotic emphasis on sex. For Adler sex does not constitute the whole of life. Having long since

gone the path of development quite independent of Freud, he looks upon this as only one of the elements of life that, like all others, is material to be used under the direction of egotistic or of social ideals. And here exactly as elsewhere he finds that it is not the actual difficulties, the actual problems and lacks of existence that cause neurotic reaction, but the unwillingness of the individual to accept the logic that these actualities involve and to adjust his working ideal, his "fiction" or plan of action and endeavor, to meet the situation as it humanly is. Does man see in woman only an object of his egotism, is he afraid to acknowledge her right of individuality as well as his own, does he submit to her caprice merely that he may hold her in his power? Is this, again, the woman's attitude? Does each one retain the infantile attitude of expecting only sacrifice and affection from the other? Or has the corrective force of social feeling developed in each individual true powers of co-operation and fellowship?

"So long as this leading impulse to win the upper hand (*dieser leitende Zug nach oben*) fails to come to view in the analysis of a psychogenic illness, just as long does the true nature of the disease remain unclear. For, valuable as is the insight that the psychiatrist may have won, without the establishment of the relationship between the secondary leading lines of the winning of pleasure, of self-preservation, of emotionality (*Affektivität*—Bleuler) and of those that otherwise grow out of organic inferiority (Adler) without relating all these secondary lines to the ideal of the personality (*auf das Persönlichkeitsideal*)—our insight remains incomplete, there fails unfortunately only the spiritual connection (*fehlt leider nur das geistige Band*).

It is because the roots of this ideal lie so deeply established in the unconscious, and because this unconscious expresses itself with least restraint and with peculiar intensity in dreams, that dreams are so largely drawn upon in the analysis. They have been found to picture through their own medium of individually selected symbolism the attitude of the dreamer toward the problems of life, his deepest reactions to his world. "The dream receives a meaning indeed only when one takes it as an analogy, an 'as if' (*Als ob*), for which the actual line of activity has to start the interpretation." (P. 58.)

"The symbolism and the use of analogy in the dream are radiations that show the form and content of dynamic emotion intensifications, their artistic word-pictures as it were." (P. 59.) They picture, that is, the emotional exaggerations characteristic of the neurotic feeling of inferiority and ideal of superiority. And it is the duty of the individual psychologist

to make clear to his patient through analysis of the personal material thus brought to light the conflict within him that he himself has too little understood, between his egotistic instinct and his social feeling. "The need of affection as a part of the inborn reaching-out for fellowship, that at the beginning makes for the teachableness (*Bildsamkeit*—Paulsen) of the child" (p. 33), the logic inherent in this fact are called into constant aid throughout the corrective "education to fellowship" that is the purpose of this psychology.

References are to the third edition of *Ueber den nervösen Charakter*, by Dr. Alfred Adler. Verlag von J. F. Bergmann. München and Wiesbaden. 1922.

SUBLIMATION AND THE IDEAL OF EDUCATION

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For Freud, sublimation consists in the expression of a tendency, which he would speak of as a repressed wish, along socially useful lines. In the following pages I shall try to show that we may think of formal education as essentially a prolonged and elaborate process of sublimation. That education converts the natural man into the social man is of course common doctrine, and here we may perceive a certain obvious analogy to sublimation. Such an analogy, however, is altogether too vague and general to be acceptable to any careful thinker. Before we can hope to express the nature and ideal of education in terms of sublimation at all satisfactorily, it will be necessary to go far beyond this point in defining our terms and meeting several difficulties.

Some attention has already been called to educational applications of the mechanism of sublimation. Every student of psychoanalytic literature is of course well aware of the vast importance of proper sublimation of sexual tendencies in building character. And G. Stanley Hall (*American Journal of Psychology*, Vol. 26, 1915, p. 438-43) and Wesley Raymond Wells (*Pedagogical Seminary*, Vol. 28, 1, 1921, p. 73-7) have dealt more explicitly with educational applications of sublimation, in connection with various non-sexual tendencies, such as anger, self-assertion, fear and curiosity.

My purpose, however, is to take up the matter from a different and somewhat more general point of view, and to show that we can regard education as essentially a matter of sublimation. If we are able to accept this thesis, instead of dealing with it fundamentally in terms of habit formation or apperception for example, I believe we shall have a generalization very suggestive in itself, and of great value as a clue to research and practice. At the outset two closely related difficulties stand in the way. First, it may appear that inasmuch as sublimation necessarily presupposes repression, it is to that extent an abnormal psychological phenomenon, and so cannot be treated as the fundamental process of formal education. Second, it may be said that the business of converting the natural man into the social man depends on some simpler psychological process, such as habit formation or apperception.

1. It is natural that investigation should have been concentrated rather on the mechanisms of escape than on the causes and essential nature of repression. Freud and his immediate adherents ascribe it to the work of the psychic censor. A serious objection to this view, however, is that the idea of the censor is exceedingly inexact and misleading. W. H. R. Rivers (in "*Instinct and the Unconscious*") would say that experiences to which attach a peculiar quality of unpleasantness are apt to be repressed and to function as unconscious complexes. Here the difficulty is that experiences whose feeling-tone is markedly unpleasant are likely to be consciously remembered. Thus unpleasant repressed experiences seem to be forced into the unconscious by some other agency than their unpleasantness. John B. Watson and E. B. Holt would analyze repression into the functional discrepancies amongst different levels of habit structures. This seems to be the nearest approach to an adequate analysis yet presented. For the purpose of the present discussion it is important to see that repression appears as a definitely abnormal affair for all these views except perhaps that of Freud, and his theory is so vague that we can hardly estimate its bearing at all. Rivers, indeed, is careful to point out that complexes are not normal phenomena. And the normal ontogenetic sequence advances without marked disharmony among habitual functions, such as Watson and Holt have in mind. Clearly then, on these theories, it will not be possible to generalize sublimation, a characteristic mechanism of release, to cover the whole educative process.

I have indicated, however, that the above analyses of repression do not seem adequate. They are formulations rather than explanations of the fact. The question why the censor operates at all, why certain unpleasant experiences are repressed, why certain functional clashes occur, is not even raised. And this question cannot be answered merely with reference to the life and experience of the individual. It is necessary to take his environment into account, and more specifically certain characteristics of the social environment of civilization. If this be done it will appear that repression is by no means pathological, and that sublimation must play a very wide rôle in every normal life.

The social medium presents itself to the individual in the first instance not as a set of restrictions, but as a set of encouragements. The growing boy finds himself surrounded with innumerable interesting and stimulating contrivances, dimly senses great reaches of knowledge and skill into which he desires to enter, and sees in the complex life of civilization

possibilities for himself that seem limitless. The very existence of a complex and sophisticated social structure is a direct and standing incitement to every one to become a warrior and a poet, a locomotive engineer and a millionaire, a Babe Ruth and a United States senator, all in a lifetime. And this is the necessary means of the spiritual self-propagation of civilization. If the world made us no rash promises, if it seemed to offer us neither more nor less than the groove in which most of us run all our lives, there would certainly be less disappointment, but also far less chance of growth and power for society. Civilization, merely by its existence, perpetually holds out hopes of wide and rich personal fulfilment to the individual, and the reservoir of expectant youth, thus automatically renewed, is its most precious spiritual asset. Hopes, it is true, are often dashed, but at least a dead uniformity of personal type is avoided, and there is set up a perpetual ferment which may work for the highest constructive ends.

The reason why the extreme personal ambitions regularly fostered by the pressure of the social environment cannot usually find satisfaction is not mainly lack of ability in the individual, though of course this may play a part. Rather it is that civilization has few happy niches where any considerable proportion of the wide hopes of youth can ever be realized. It is in this fact, that society continually develops personalities which are potentially more complex and rich than it is able to use, that we find the *rationale* of repression. Energy so generated must go somewhere. Nascent habit structures, strongly under way and carrying a strong emotional tone, cannot be merely obliterated, even though they are never to come to full fruition. And the result is that they are forced below the surface of life.

This account of repression applies well to the pathological cases with which the literature has made us so familiar. Rivers (*op. cit.*) gives the case of a claustrophobiac whose condition was induced by a childhood experience with a dog in a narrow hallway. It is not adequate to say that this experience was repressed on account merely of its inherent unpleasantness. Rather was the repression due to the general social tradition which makes it disgraceful as well as inconvenient for boys to be afraid of dogs. And the repressed tendency to fear dogs was in no immediate sense instinctive, but the work of the child's environment. Again, assuming without criticism the well-known analysis of the Oedipus complex, it is absurd to believe that the incestuous wish is literally instinctive. If it exists it is surely the result of the infant's social environment. And as Rank and Sachs have elaborately shown ("*The*

Significance of Psychoanalysis for the Mental Sciences"), its repression is attributable directly to social necessity.

Thus the logic even of abnormal cases goes to show that repression is a regular and I believe a necessary concomitant of the social environment. Here we have a conclusion full of significance for the educator, for it is clear that repression as such is not a special pathological process, but as wide as civilization. In conceiving the task of education as the constructive release of the individual from inevitable pressure and frustration—as sublimation, that is to say—we are not stretching the proper meaning of terms. Furthermore, such a formulation puts us in position to see the essential relation of education to social progress, which depends precisely on regular incitement of the individual beyond reasonable prospects of direct fulfilment.

2. It should now be easily apparent why we cannot adequately treat education as a rectification of original nature by means of habit or a building up of apperceptions. In a very general sense, of course, these terms may be applicable, inasmuch as any change in behavior resulting from use may be called a habit. But to think of the conversion of the natural man into the social man merely as a matter of habit formation is to miss an essential point. As we have seen, the social environment regularly promises more than it can directly give. And to recognize this complexity of the situation is to see the insufficiency of accounts of education in terms of habit or apperception, and the necssity of an account in terms of sublimation. By means of this notion, as I shall now go on to try to show, we may arrive at an interpretation of educational practice which makes clear its essential relation on the one hand to social power and progress, and on the other to individual stability and happiness.

(a) It is very obvious that education must equip the individual with at least that minimum of skill required to make a living in the environment of industrial civilization. To recognize this is the merest utilitarian common sense, and most educators would insist that such an ideal is exceedingly inadequate. Unjustifiable as the "bread and butter" ideal of education may be, I believe that many of its critics have taken the wrong line, and that we gain a fresh insight when we apply the theory of sublimation. The solution emphatically does not consist merely in mixing certain cultural elements into technical education and letting it go at that. Most persons spend a large part of their time in the actual business of making a living, and to allow time so spent to be a dead area in their lives is waste, to say the least of it. What is called for is not

so much an abandonment or specific expansion of the bread and butter ideal as a transformation of it, so that the individual may find in his job not merely a means of livelihood, but an opportunity of ampler and more happy living. Inevitably society imposes a moral strait-jacket upon the ambitions and hopes of youth. The boy cannot be all he hoped to be. Thus it is of central importance that the job and the technique of the job shall not seem a direct frustration of individuality and a cause of external and internal maladjustment. Now this can only be brought about by so humanizing the technique of civilization that the worker may find nothing essentially alien to himself in the necessary routine. The work of the world must be interpreted not as a humdrum round, but as a sphere of action where impulse can find satisfying expression. Men should be taught that the industrial fabric exists and functions not to produce bread alone, but also happiness. I do not, of course, mean that this should be attempted by a sort of preaching. To do so would almost assuredly be futile. I mean that such an ideal should be woven into the warp and woof of technical and commercial education. The theory of sublimation stands as a constant plea for more intelligence and specifically more human intelligence in fitting the individual for his job. The technique of civilized society, if rightly interpreted, can be made far more than the means of physical subsistence. It can be exhibited as a field in which the individual can sublimate those repressions which otherwise are apt to cause disaster.

(b) It is familiar that the theory of sublimation offers us a penetrating psychological interpretation of culture. Art, for instance, is often exhibited as a sublimation of the sexual instinct. Apart from any such special pieces of analysis, which always have a rather suspicious and fanciful look, there can be no question that culture in general presents a constructive avenue of escape from repression. And I wish to consider the educational bearing of this idea.

It is in this use of the theory of sublimation that we find what is perhaps the most decisive of all arguments in favor of retaining a large amount of non-utilitarian cultural training in the process of education. When the utilitarian forces the issue, and asks what is the use of reading a few English, French or German classics, of laboriously acquiring a mediocre musical skill, or a smattering of philosophy, by far the most effective reply is to meet him on his own ground with the reply that these things are directly useful in providing possibilities for sublimation. In the assimilation by the individual of as much of the richness of human culture as he can take in,

lies the way to happiness and stability. Thus an *apologia* for culture can very easily be constructed, if one be necessary.

There is, however, one practical difficulty so general and so fundamental that it is worth while mentioning it. A fairly well-established finding of applied psychology is that the average mental age of the population of the United States is certainly not more than sixteen years, and probably less. We are faced then with the problem of mediating culture to a very large number of relatively unassimilative minds, which in spite of their modest level of general ability urgently need open avenues to constructive self-expression, and should have them both for their own sakes and for the sake of the community. This of course is a practical problem, and I am here dealing with theoretical matters. One concrete suggestion, however, I will venture. I believe that in the motion picture we have an engine of the highest value in this respect. There are, of course, any number of holes that can be picked; but when all is said and done, it remains a very successful means of mediating ideas and beauty of a sort, in a way that a majority of individuals are able to assimilate. As such the motion picture seems to me to be one of those luxuries with which industrial civilization cannot dispense.

(c) A complete scheme of education must teach people to play as well as work and think. Moreover it must teach them to play, and to understand and enjoy playing in certain rather specific and often sophisticated ways, for civilization develops its playgrounds, and it is of these that the individual must be able to avail himself. This is the third great avenue of sublimation that is open to us. And once again what is required, and what ought to be inculcated, though by methods subtler and more effective than direct preaching, is a spirit and an attitude rather than or at least logically prior to a technique. The ability to find oneself in sport, in social relaxation and in the out-of-doors is a precious element in moral skill. It is, too, one that has been lacking in American life, where sport is apt to be physically and financially strenuous to the point of developing anxiety neuroses, where the art of dining is toolittle understood, and where the out-of-doors has been regarded mainly as a place where marketable timber can be found.

(d) Finally a well-rounded process of education should inculcate a certain attitude towards religious belief and practice. Flournoy writes: "*Le conflit entre le christianisme et la science a éclarté d' abord sur le terrain cosmologique; la lutte s' est transportée ensuite sur le terrain de la biologie; elle se trouve maintenant sur celui de la psychologie.*" A theory of

education however, that is well founded psychologically will do well to ignore the theoretical conflict between religion and science, for whatever our opinons in regard to theology, there can be no doubt that religious belief and practice afford a means of sublimation that ought at least to be made available to everyone. The educator who gratuitously bars any one's way to religion, whether directly or indirectly, is certainly doing the individual an injury.

It will be noted that I have said nothing as to the relation of education to home life, though intelligence and balance here are manifestly essential to general stability and happiness. I am inclined to think, however, that success in the *vie intime* of the home so largely depends on success in the four departments of work, culture, play and religion that, however important, it does not call for a separate consideration here.

The educator as such cannot change social conditions. He has to accept the world as he finds it, and fit individuals to survive and to survive happily in actual surroundings as they are. His work then is to encourage insights and attitudes which enable the individual to use means actually at hand to escape constructively from the repressions which society regularly imposes. Great hopes and wide ambitions are the peculiar possession of youth, and without them the world would be poor indeed, even though most of them come to little or nothing. It is the task of education to conserve this great reservoir of nascent personality as a social asset, and this can only be done by guiding the individual into a field of relatively happy, relatively stable self-expression.

A NOTE ON MORAL EDUCATION

By F. B. Knight, University of Iowa

Moral Education concerns itself with changing pupils for the better in the broader phases of development such as honesty, values, attitudes, and purposes. In contrast to education in arithmetic or chemistry, which changes pupils in skills and knowledges, Moral Education is busied, in addition, with changes in *intent* and in practising that intent. The contrast is by no means perfect.

Moral Education is further different in that its task is excessively more difficult. The increase in difficulty lies in:

(a) Complexity and subtilty of the function. Arithmetic skill, for instance, is relatively simple. Its physiological basis is comparatively well known; motor habits of the eyes and hands and neural patterns in the cortex very likely tell most of the story. But the physiological basis of that with which Moral Education deals involves an interlacing of neural patterns in the cortex, motor habits, *plus* the intricating factor of those bodily changes which are or cause emotions.

(b) The objective content of Moral Education vs. a concrete school subject like arithmetic is amazingly complex. We know in measurable terms what we want in arithmetic. We can write it out so that others know what we mean. The consolidation of skills called arithmetical ability can be broken up with approximate success into its constituent bits, which are such things as $2 + 2 = (?)$, $7 \times 7 = (?)$, and so on. But as soon as we attempt to break up the aims (what we really want) of Moral Education we lose its very life, we get a chilled corpse, not the thing itself.

(c) Another difficulty more present in Moral Education than in arithmetic education has to do with measurement of progress in ability. In arithmetic we can measure with far more than indifferent accuracy. We do have scales for measuring growth in morals, character, citizenship and other rather synonymous traits or skills. But these scales are ineffective. Perhaps the information side of morals can be measured. The informational side of Moral Education is, however, relatively unimportant. Modern psychology is leaning to the opinion that valid and reliable measures of a function are indispensable to its effective teaching. Measures of the function involved are exactly what Moral

Education does not yet possess. We do not know with essential specificness what we want to teach. We do not know what degree of success attends our instruction.

(d) Moral Education is further handicapped in the lack of knowledge concerning the status of a particular pupil. We can soon tell the status of a pupil in arithmetic. We cannot tell the status of a pupil in the function dealt with by Moral Education. The following data are pertinent. Over eighty practising elementary school teachers were asked to pass judgment upon the status of the average pupil in ten specific items subsumed under the concept of character or morals. These teachers worked with pupils coming from a particularly homogeneous population. They all had, as far as we know, equivalent "average" pupils. The status of the average pupil in these ten items was described as follows: The numbers refer to the number of teachers making the judgment of status as described.

STATUS OF THE "AVERAGE" PUPIL IN TEN SPECIFIC CHARACTER TRAITS

CAN THE PUPIL BE TRUSTED?	ANSWERS			
	Always	*Nearly Always*	*Sometimes*	*Never*
1. To do a given task exactly as it was given to him to do?	5	50	25	1
2. To work as faithfully when he works alone as when he is observed?	4	32	43	2
3. To stick to a point when he knows he is right?	25	37	19	0
4. To avoid taking property belonging to others?	28	46	7	0
5. To avoid making false claims about himself?	16	42	16	4
6. To be fair in examination?	18	45	17	1
7. To return borrowed property?	25	44	9	0
8. To keep a promise?	19	45	13	0
9. To repeat a message accurately?	9	35	31	1
10. To be honest in scoring himself?	12	57	10	2

Without taking rough data too seriously it is evident that judgments of character status are a product of the fact itself *and of the standards of an outsider*. Such disagreeable disparity of opinion confuses both the aims and the methods of instruction. If the nine teachers who claimed that pupils as they know them always repeat a message accurately are right, we have a teaching situation entirely different than we would have if the thirty-one teachers who claimed that pupils as they know them only sometimes repeat messages accurately are right.

Furthermore, Moral Education must emphasize in its

thinking and in the techniques resulting from that thinking *ability* to do the thing desired. Up to now the emphasis has been upon intent to do the thing and knowledge about the thing. But the gap between intent and actual performance exists in moral acts as well as in intellectual skills or manual tasks. "To repeat a message as given" is a good case in point. Success in this depends on knowledge, on intent, and on ability. Many failures in repeating messages are wrongly explained by poor intent when inability would be a sounder diagnosis. Most children find difficulty in repeating the message, 647321, correctly when the repeating is immediate and the emotional aspects of the situation approach a negligible quantity. When meaningful content (a message) is to be repeated we have a much more complicated affair on our hands. For the message heard or seen is but one factor in the thought content which is repeated. The emotional aspects of the situation and the mental set of the message bearer often work on the original stimulus quite unconsciously: When we realize that the average correlation between certainty of accuracy in report and the plain fact of accuracy of report is but + .5[1] when motives for deception are *nil* and the reporters adults, we easily see the complicated problems besetting even the simple task of getting objective standards for truth telling.

The fact that acts, thoughts, intents, attitudes dealt with by Moral Education are often quite at the mercy of essentially non-moral psychological mechanisms should receive far more attention than a perusal of the literature on Moral Education reveals.

Some years ago a fellow teacher of the writer, whom we will call Mr. A., confided in the writer that Mr. B., the superintendent, was a liar, a cheat, and a very deceptive person. Mr. B. had promised Mr. A. an increase in salary; when the increase was due, Mr. A. reminded the superintendent of the conversation in which a salary increase had been promised. Mr. B. recalled the time and place and the conversation, but denied that a salary increase had been promised. The teacher was genuinely shocked, for he held the superintendent in the very highest regard and here the superintendent was, looking him in the face, telling (he thought) a bald-faced lie.

Now how should the superintendent be rated on truth telling? How should the teacher be rated on his ability to

[1]From an unpublished study by Williams and Knight on "The Reliability of Testimony."

repeat a conversation? The two gentlemen sincerely and honestly interpreted the same conversation differently because of their different mental sets. The teacher, wanting an increase in salary and salary being talked about, actually heard a definite, out and out promise. The superintendent, mindful of many administrative exigencies, may have expressed himself hopefully on the salary question, but was scrupulously careful to refrain from both a definite promise or insinuations which could be reasonably interpreted as a promise. Arguing from the example, is it not evident that the objective traits and specific acts often possess a false and misleading simplicity in Moral Education literature?

It might be worth while in our thinking to bear the following in mind:

Moral education is far more complex and intricate than has been commonly assumed.

The character status of pupil will remain an ill-defined, confused affair until methods of measurement are available which will be more dependable than our present methods of estimate.

Ability to act well must be more seriously considered. Intent and knowledge should not be slighted but ability should be emphasized.

Moral shortcomings can be properly diagnosed only upon a background of psychological fact, as yet little used in Moral Education.

EDUCATING GIFTED CHILDREN IN HAMBURG

By Robert Jahrling, Pd. D.
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Within the last decade Experimental Education has made remarkable progress in the study of the mentally subnormal child. Today the pendulum is swinging to the other side. The widespread recognition of the existence of gifted children and the ever-increasing demands for special educational opportunities to meet the needs of this class of children are making the slogan, "Clear the way for the competent," a reality. The movement to select and educate gifted pupils in special classes is growing in all progressive communities. We have come to recognize the moral injustice of a uniform education for all children irrespective of their mental capacities.

The reorganization of the Hamburg elementary schools in behalf of the gifted child exemplifies the most prominent and successful experiment in this new field of Experimental Education. It is often said that the elementary school is the foundation of a nation. The advancement and increased efficiency of the elementary school mean improvement and progress for the nation. To follow exactly in the footsteps of the Hamburg educators would probably be unwise, but at least an attempt at reorganizing our elementary schools so that our gifted children may be given an opportunity, not so much to complete the required eight-year course in six or seven years, but rather to enrich and widen their scope of education, would be both practicable and profitable.

The Hamburg experiment not only throws light upon the educational opportunities afforded gifted pupils in that city, but also upon a complex method of selecting such children.

Proceeding on the social-political supposition that gifted children should not only be prepared for the professions but also for the practical vocations, inasmuch as the strength of the nation actually depends on the latter, the Hamburg school authorities have introduced the nine-year elementary school. The purpose of adding another year to the school course is to give the gifted an opportunity to learn foreign languages and to receive a better general education. Only those gifted children who show extraordinary linguistic ability are to be withdrawn from the regular eight-year

course. At the end of the fourth year, the course branches into two divisions. The one is called the German Division (*D-Zug*), which embraces four years more, making a total of eight years. This is really the old *Volksschule*. The other division embraces five years more, and is known as the foreign language division (or *F-Zug*). The foreign languages studied are French and English. Provision is also made, by means of introducing special transition classes, for entering the vocational, technical, and professional schools.

In the spring of 1918, twenty-two beginners' classes of the *F* division were to be started. Fourteen boys' and eight girls' classes were to be formed. Since each class was to consist of 45 pupils, it meant that 990 children were to be selected from among 20,000 of the fourth year. With the assistance of the Psychological Seminary in Hamburg, the school authorities, under the direction of Superintendent Umlauf, worked out this huge pedagogical problem.

It was the work of the Psychological Institute to prepare the tests and observational-record-sheets that were to be used. Members of the Institute also conducted the experiment, scored the papers, and participated in the final selection.

After a test, especially suitable for the selection of gifted children ten years of age, had been prepared by the members of the psychological laboratory, it was given a trial under practically similar conditions in the schools of the suburban towns. Since the *F* classes made greater demands upon the pupils' general mental ability it was the primary aim of the investigators to study *general intelligence*. An effort was made to use only such tests as would evaluate the abilities needed in the *F* classes. The impracticability of individual and action tests compelled the investigators to resort to group tests. Steps were also taken to avoid similarity in content in making up new tests each year. The tests finally decided upon and used in the experiment were:

a) Analytical tests.
   I. Definition of the concepts: booty, uncle, courage, jealousy.
   II. Fabel-test: The moral is to be drawn.
   III. Judgment test: To find and criticize the contradictory statements contained in a story.
   IV. Power of observation: Long sentences that have been presented once are to be reproduced in writing; mechanical and sense errors are to be differentiated in the reproduction.

b) Synthetical tests.
   I. Completion of logical sequence: Lipmann's revision of Ebbinghaus test; sentences and parts of sentences are to be connected by filling in the places where the conjunctions have been omitted.

II. Three-word test: A sentence is to be constructed from three given words; examples taken from Piorkowski.
III. Logical arrangement of concepts: A series of concepts that have been misplaced are to be arranged in logical sequence.
IV. Composition test: Two pictures representing different phases of a situation, are presented; the situation is to be recognized and told in a composition.

The preparation of the observational-record-sheet, which forms another phase of the complex method of selection used, was entrusted to Miss Martha Muchow, who, with the co-operation of the school authorities, moulded it into its final form. The record-sheet is divided into four sections: I. Child's name and date of birth; II. His home environment; III. His accomplishments in individual school subjects; and IV. Questions with regard to the child's ability to adjust himself to a new situation, attention, fatigability, power of observation, memory, imagination, ability to think, linguistic ability, special interests and talents. Besides, there are twelve questions concerning emotional and volitional phases of his character. In filling out the record the teacher is guided in his observation of the child by directions and explanations contained in the sheet.

Unfortunately, the teachers were not given sufficient time to fill out the records, so that their value in the final selection was almost negligible. In the experiment of 1919, however, this error was corrected.

Since all the children were to be tested at the same time, it was necessary to call upon many teachers and members of the Institute to act as examiners. This procedure, however, would have led to chaos. The instructions, the personal equation of the examiner, and other conditions would have been different for each group. In order to make the conditions as uniform as possible, each examiner was provided with a list of instructions which he was to follow most obediently. Such matters as the time of each test, the distribution and collection of papers, the explanations to be given to the children, etc., were included.

The tests took place in eleven different buildings, on two non-school days in March. The children were divided into 61 groups, each group consisting of 20 to 25. A head-examiner, who was acquainted with the entire organization and necessary arrangements of the test, was placed in charge of each school. For the most part, members of the Psychological Seminary were selected for this position. For each of the 61 groups, an examiner was assigned. Teachers, members of the Institute, and persons with some psychological training

played the rôle of examiners. On the evening before the test, the examiners were again advised by the Superintendent and the Director of the Psychological Institute as to their specific tasks. In this way, a uniformity of conditions was made as perfect as is possible with so large a number of individuals.

The papers were evaluated both qualitatively and quantitatively. The scores were to be distributed on the basis of the normal curve of distribution. The usual school marking system, namely, 1, very good; 2, good; 3, fair; 4, unsatisfactory; 5, failure, was accepted as the unit of scoring. The scores made on each test were totalled, and the pupil was assigned a total test mark. In each of five of the tests given the maximum was *1*, and in the three remaining tests the maximum was *2*. Thus a pupil attaining maximum in each test would have a total score of 11 points. The lowest score possible, then, would be 55 points.

In the meantime, the observational-record-sheets that had been filled out by the class teachers began to come in. These were examined by Miss Muchow, who made special note of any details that might have particular bearing on the child's accomplishment in the psychological test, or that might be of value in the final decision.

The results, which coincide almost exactly with the normal curve of distribution, reveal two very important facts: (1) the average score for the boys is 33.15 and for the girls 33.42, or almost absolute equality; (2) *there is a positive correlation between the teacher's judgment and the results of the psychological test.*

In addition to the psychological test and the observational record, the teacher's judgment, the pupil's school marks, and his general school record including attendance, punctuality, etc., were taken into consideration in the final selection.

We are indebted to Prof. William Stern, Director of the Psychological Institute in Hamburg, for the formulation of this complex method of selection. Convinced of the inadequacy of any *one* method, he saw that the only salvation lay in the combined efforts of psychologists and educators. He went even further. The teacher's judgment, a medical examination, and psychographic-observation are also important factors to be included. The value of a complex method of selection lies in the fact that the responsibility is placed on no *one* individual, and since there are several factors that should be considered in the final selection there is every likelihood to believe that Stern's method is more

reliable than the psychological test alone. Above all, the experiment has called attention to the need of establishing commissions, consisting of psychologists, educators, medical men, and social economists, that should study, test, and organize methods for selecting very bright children in their respective cities.

EXPERIMENTAL PEDAGOGY, THE SCIENCE OF EDUCATION

By Robert Jahrling

The independent science Experimental Pedagogy is not an absolutely new creation, but just as chemistry was born of alchemy and astronomy was born of astrology, so Experimental Pedagogy has been the natural outgrowth of such allied sciences as experimental psychology, child-study, pathology and psycopathology. The fact that it is so related to other sciences, however, does not deprive it of its independence. For, after all, it can be shown that all sciences are related and interdependent. Their aim is to discover the truth, and while they may even be very similar in the methods and materials of investigation they differ in viewpoint, i. e., the angle of approach. It is in this latter respect particularly that Experimental Pedagogy differs from the sciences of which it was born and is therefore entitled to be recognized as an independent science. Experimental Pedagogy is sometimes called "applied psychology," "applied ethics," "logic," or some similar science, because it very often makes use of the results attained in these sciences. Such designations are entirely unjustifiable and must be considered as misnomers.

The investigator in Experimental Pedagogy is especially indebted to experimental psychology for his methods of investigation and for his knowledge of the mental processes of the adult. The adaptation of these methods to the study of the child's emotional, volitional, mental, and physical characteristics constitutes, in the main, the most important contribution of Experimental Pedagogy. In the past educational practises were determined on the basis of empiricism and traditional doctrine, or upon the speculative thinking, concerning the nature of the child, and imaginative creations of a Rousseau. Today Experimental Pedagogy attempts to enable the educator to justify his practises on the basis of a thorough scientific study of the child's mental and physical development. It is not only interested in the child but also in the other two elements that go to make up the school machinery, namely, the *teacher* (inclusive of methods, textbooks, use of school materials, etc.), and the school organization (i. e., grading, promoting, school hygiene, etc.)

as a whole. To discover the most economical and efficient ways and means of conducting the entire educational machinery is the aim of Experimental Pedagogy. In passing, let it be said that this science does not concern itself with the determining of the aims of education. That is the task of the social sciences.

What are some of the most important objections raised by the opponents of Experimental Pedagogy, and what are the most serious limitations of this new science? There are those who maintain that the experiment, at the present time, is not suitable for the investigation of many pedagogically important phases of the child's emotional and volitional life. In place of the experiment they recommend the use of exact observation, biography, statistics, and comparative methods of investigation. Their objection becomes invalid, however, when they are reminded that the very methods suggested by them for the study of the child's emotional characteristics are the ones applied by the experimental pedagogue. It is also said that the experimental method cannot be applied to young children because they fail to understand the purpose of the experiment and because they lack the power of introspection. In answer to this objection it must be said that it is not always necessary for the child to understand the purpose of the experiment in order that it be conducted successfully. That the young child lacks the power of introspection and that the older child or adult is not always truthful in his introspection are facts, but is Experimental Pedagogy so limited that it can resort only to the method of introspection? Those familiar with the science know that this method is only one of several. We often meet with the argument that the experiment cannot determine the aims and true values of education. Furthermore, since it confines itself primarily to didactics and to the economy and hygiene of learning, it is very improbable that it will ever effect a reform in educational ideals. Again it must be stated that this science has nothing to do with the aims, values, and ideals of education. Those are the problems that belong to the social and cultural sciences. That Experimental Pedagogy is inclined to deal only with the problems of elementary instruction and totally disregards those of the higher schools is due rather to the infancy of the science than to the lack of interest in higher education. Surely the time will come when there will be both a secondary and a college pedagogy founded on experimentally determined principles. Unfortunately, there exists one serious limitation, namely, the inability to determine experimentally the per-

sonal influence of the teacher upon the individuals in her class. At present we are groping about in the darkness to find a way of recognizing and measuring, both quantitatively and qualitatively, this invisible, intangible something that exists between teacher and pupil, and which is perhaps a very important phase of all education.

On the other hand, in contrast to the non-scientific methods of pedagogical research formerly in vogue the experiment has four distinct advantages: (1) The experiment compels us to investigate the facts systematically and does not wait, as the observational method does, for the phenomena to occur; (2) the experiment makes possible the repetition of observations, since we are able to control both the internal and the external conditions; (3) it enables one investigator to check up the results of another by repeating the same experiment under similar conditions. In this way the results obtained are more objective and free from the presuppositions and individual interpretations of an investigator; and (4) the experiment requires the co-operation of different investigators with regard to the aims, means and methods of investigation. It is only by means of co-operation and the improvement of technique that a science can progress.

What are the requirements of a psychological and pedagogical experiment and what relations do these bear to each other? According to Wundt, every experiment must fulfil four conditions before it can be considered scientific: (1) The observer must be in a position to determine the beginning of the process to be observed; (2) the observer must observe most attentively all phenomena and follow them in the course of their development; (3) in order to check up the results it should be possible to repeat the experiment under the same conditions; and (4) it should be possible to study the conditions of the experiment by varying and controlling the accompanying circumstances. Since, as has already been pointed out, Experimental Pedagogy is indebted to experimental psychology for its methods, the pedagogical experiment naturally meets all these requirements. In addition to the demands made by Wundt, Meumann has also set up four requirements which every scientific-pedagogical experiment must meet: (1) The first condition of all experimentation is the possibility of optionally bringing about the phenomena to be investigated; (2) the arbitrary changing of conditions to coincide with the purposes of the investigator; (3) this arbitrary changing of conditions should be affected only in the light of definite scientific purposes; and (4) the quantitative determination or the measuring of the phenom-

ena observed should form an integral part of the experiment. The marked similarity in the demands of these two scientific investigators is obvious, but it still remains a part of our task to show wherein the psychological experiment differs from the purely pedagogical. The former is especially appropriate for the study of child-psychology, but the latter is more suitable for determining the most economic and hygienic methods of teaching the individual school subjects in accordance with the developmental stages of the child's mental progress. It is in the field of didactics, particularly, that the purely pedagogical experiment has proved of greatest value.

This brings us to a discussion of the different types of experiments that can be used in Experimental Pedagogy. In the first place, there is the psychological experiment which attempts to found a child-study. This type of experiment is intended for the study of the child's emotional life and its development. To determine the different effects that various mental activities have upon the child is another field of operation for the psychological experiment. Another type of experiment is the didactical whose main function has already been mentioned. The third type is the supervisory experiment which deals with such problems as the significance of co-education, the introduction of special classes, the length of the school course, etc. And finally, there is the pedagogical experiment on a large scale, which aims at a complete reform of the entire educational system on the basis of sound scientific principles. The introduction of the "abbreviated gymnasium" in Germany and the resulting changes in the entire educational system, beginning with the elementary school and affecting even the university, are a very striking illustration of the pedagogical experiment on a large scale.

From this brief presentation can be seen the close relationship between the type of experiment applied and the problem to be investigated. In every case the problems, or field of operation, determine the type of experiment to be used. According to Meumann, the problems of Experimental Pedagogy may be classified under four headings: (1) The Pedagogical investigation of development, i. e., the determination of physical and mental development in general and their relation to each other and the determination of individual abilities; (2) the study of individuality and intelligence, i. e., the determination of mental ability (mental, emotional, and volitional differences); (3) the study of the school child at work (technique and economy of school work and home

activities); and (4) the establishment of a method of training and instruction and school organizationo n the basis of results obtained in the study of the above mentioned problems.

As for the methods of investigation to be used Meumann cites the following: (1) The method of placing yourself in the child's position as the imaginative Rousseau did he designates as unsatisfactory; (2) the collection of childhood reminiscences; (3) the historical-comparative method for the study of ontogenetical and phylogenetical development; (4) the collection of articles actually produced by children (games, compositions, drawings, etc.); (5) direct observation of children either individually or in groups, aided by questionnaires, diaries, observational records, individuality studies, etc.; and (6) the experiment.

Although Experimental Pedagogy is a comparatively new science, its rapid progress and its widespread recognition are due both to the results it has attained and to the interesting problems it undertakes to solve. At present there is a tremendous drive in this new science, and both psychologists and experimental pedagogues are approaching the various important problems in education with a zeal and a spirit of co-operation that promise to yield excellent results. The selection and education of very bright children in Europe have progressed with amazing rapidity because of the efforts put forth by such men as Prof. William Stern, Drs. Moede and Piorkowski, Dr. Ruttmann, and others. As a result of the war the need for scientific vocational selection has been keenly felt, and it is to this end that Dr. O. Lipmann and Dr. Stolzenberg of the Ludwig-Loewe-Apprenticeship School in Berlin are conducting numerous experiments. Unfortunately the work in experimental didactics of Dr. W. A. Lay (Karlsruhe) and his educational principles are very little known in this country. It is hoped, however, that his numerous works will be translated in the near future so that a greater familiarity with them will result. Another phase of this entire movement worthy of mention is the widespread establishment of psychological-pedagogical laboratories and teachers' associations devoted to the investigation of educational problems. Of these the most prominent in Europe are the Psychological Institute in Hamburg and the Leipzig Teachers' Association. It is only by means of such institutions and the establishment of a chair in Experimental Pedagogy at our normal schools, colleges, and universities that we can ever hope to free education from the bonds of neighboring sciences, and to cultivate a true professional spirit among teachers and supervisors.

THE SUPERIOR GIRL IN EARLY ADOLESCENCE

By E. Leigh Mudge

It is not undemocratic to recognize the superiority of certain girls or boys. The existence of wide individual differences in intellectual capacity and in ability to appreciate the good, the true and the beautiful cannot be questioned. The superior girl may live in the city or the country; she may be the child of wealthy parents or poor. In our country as in few others she has a chance to improve her condition whatever her early environment may be. Our system of public education provides a general selective process through which girls of superior type tend to group in the higher schools of learning.

The Average Girl

It is well for us to keep in mind that most of our studies of childhood and adolescence have been based upon relatively select groups. Investigators have most thoroughly observed their own children, their own students, or other boys and girls similarly selected and relatively superior. The great need just now is for a thorough study of the average girl and the average boy. The extensive psychological tests in the army during the great war have clearly indicated that the average intelligence of our people is considerably lower than we had supposed. The Stanford revision of the Binet scale established the mental age of sixteen as that of the average adult. The army tests indicate that of the drafted men examined less than fifteen per cent were above the mental age of sixteen. The mental age of the average drafted man appears to be a little over thirteen years. Allowing for the exemption of some men of superior intelligence from the draft—a factor which is partially offset by the exemption of extremely inferior men—it appears that the average man is of the intelligence which the superior man attains at the age of thirteen or fourteen. Probably the mental average for girls differs little, if any, from that for boys. If this is true, the mental difference between the average girl and the superior girl is relatively large.

The Seriousness of the Superior Girl

Among the characteristics of the superior girl may be mentioned a serious attitude toward life and its problems. By this I do not mean a gloomy attitude, although there is a characteristic melancholy of adolescence, but the tendency to recognize the actuality and significance of life problems. The published reports of a recent examination of the reactions of a large number of high-school students to personal and social problems seem to indicate that the more frivolous and thoughtless replies were from those who were retarded—older than their classmates, but possibly of lower mental age. The superior girl is full of life and fun, but she is not quite satisfied with chums and companions who take nothing seriously.

The Tomboy

In early adolescence the superior girl is apt, in a normal environment, to be a tomboy. Considering the college girl as generally superior, a series of autobiographic recollections of early adolescence written by college girls seems to the writer very illuminating. Of one hundred of these carefully written papers, twenty-seven plainly indicate that their writers were in early adolescence tomboys, delighting in the active games of boys rather than in doll play or quiet games. One characteristic paper includes the following:

> Nobody understood me. I did not wish to grow up. I was just a wild sort of a tomboy who loved to run and have a good time. Why I hadn't been made a boy always seemed a grave mistake . . . Skirts, especially long or tight ones, were an unnecessary impediment to free movements.

There are indications that many who do not definitely describe a tomboy stage were similarly fond of open-air sports, climbing trees, hiking and other boy-like activities. In many cases they seem to contrast themselves with their schoolmates who spent their leisure hours in idling and childish gossip.

Not Boy-Struck

The premature love affairs of early adolescence appear to be more common among girls of average mentality or below than among the girls who later go to college. The most common attitude toward boys expressed in the papers previously mentioned is the unsentimental friendship that harmonizes with the tomboy nature of the girls themselves. They like boys and enjoy playing their games with them, but do not share in

the sentimentalizing of many of their girl friends. Some confess having had a dislike for boys or a decided preference for the society of girls, but the prevailing feeling seems to be a wholesome comradeship with boys. Some recall a feeling of scorn for the sentimental girls they knew. At least one girl pretended an interest in "dates" and evening strolls with boys in order to be with the group, but seems to have somewhat despised herself for this insincerity. Some of these papers mention more or less serious special friendships with boys, but the general impression is clearly that these girls were interested in boys as friends rather than as sweethearts, and that most of them protested inwardly against the silly love-making of other girls of their age. There is little indication of a feeling of superiority over other girls. Some of them felt estranged from others and were not quite at home in the group, but there is little evidence of priggishness or conceit.

Educational Corollaries

There are two points at which to attack the problem of the early adolescent girl. The superior girl is apt to be a leader, and the proportion of such girls in a group has much to do with holding steady the ideals of the entire group. But the average girls are more numerous and may set the pace for the girl life of a community. Probably we should address our efforts more decidedly to the average girl, doing democratically the greatest good to the greatest number. We should also recognize the leverage of leadership and seek to aid the superior girl in making the peculiar adjustments which are her task. Neither of these attitudes should exclude the other. There are many ways in which we may positively interest both classes at once. For example, we may encourage out-of-door exercise for early adolescent girls, promote the Camp Fire Girls and similar organizations, and thus stimulate in the average girl the impulses which she may possess in less degree than her superior sister, at the same time providing a wholesome opportunity for the sister's powers of leadership.

MATHEMATICS IN CURRENT LITERATURE

By Martha MacLear

One of the reasons adduced for the teaching of mathematics, in addition to the very obvious one of utility, has been that a knowledge of mathematics is necessary for intelligent reading. This assertion has such a facile ring that it sounds almost as specious as the doctrine of formal discipline. At least it had this unreal sound to the writer when it was propounded to the class by our erudite professor, and it sounded not one whit more real to me when I repeated it to my own class. Judging from the expression of doubt on the faces of my students, they felt the same way about it. Probably my voice carried my own lack of conviction. At any rate, the doubt was there. I wasted no time in argument but, as much for my own benefit as for theirs, I set them the task of counting words of mathematical connotation in the magazines of the day. Realizing that this is only a very limited view, I yet submit it as an interesting although brief survey showing how much we are endebted to mathematics for our pleasure and understanding in reading.

The periodicals investigated were the *Century*, *Good Housekeeping*, *Popular Mechanics*, *the Delineator*, *the Saturday Evening Post* and one issue of the *Washington Post.* Of course, in the last named, the financial sheet was discarded as being too obviously mathematical. The following tabulation is the fruit of our labors:

There are some interesting facts which will be readily noticed, viz., the small size of the fractions used; the wide range of the integers used, from simple numbers to billions; the simple character of the problems suggested; the number of words and phrases used daily which have ceased to connote an especial mathematical significance and yet which are dependent on such knowledge for their adequate apprehension; the prevalence of business terms and the rather limited number of tables used. The mention of foreign money might suggest the use of mathematics as one means of international good will. I realize that the use of this subject has already been suggested as a means of communicating with Mars and that when it was suggested to the old German professor that, perhaps, the Martians did not understand the subject, he replied, "Then let them go the Devil." However, I do not

recall the suggestion of its use in international relations. Finally, it seems to the writer that a number of studies along this line might be suggestive as to both the possibilities and limitations of mathematics.

Words and Phrases with Mathematical Connotation—no one, none, speculatively, half hidden, to a degree, semi-military, ends of justice, safe deposit vault, hundred miles, half an hour, twice daily, 200 ft., 10.30 A. M.—3.30 P. M., lower prices, remaining, doubled his salary, earns every dollar I pay him, business of production economic, secondary, productive, equal number, hundreds of tons, no end of opportunity, half a dozen, twice, once, time, 5 minutes, 20 seconds, teens, twenties, 3 generations, few, limits, minutes, hour, double, four weeks, twenty-four hours, year, pair, second, century, problem, method, increasingly, half an inch, one by one on the rope, too early, universal, minority, maximum, no little, debt funding, 10-16 in. in diameter, 300 yds. across, scores of cakes, hundreds of feet, mean winter temperature, two decades, few more years, devasted area, one-third the amount of beer, low freight rates, radical, proposition, reduced, weight, localize, position, equality, step, transfer, less than, cross section, average, a score, distance, quantity, double, few, size, small big, noon, lifetime, numerous, one time, much, many, more, no time, limitations.

Words of Special Mathematical Flavor—straight, level, figures, example, division, exercises, side, solid, add, divided, negative, sign, edge, line, total, addition, result, section, halves, function, increase, power, cylinder, semicircle, corner, cube, planes, area, oval, average, cancellation, base, height, high, surface, breadth, dimensions, circles, factors, process, distance, length, width, wide, sum, method, fundamentals, center, count, proportion, integers, hypotenuse, triangles, multiplying, depths, measure, measuring, right angles, square, altitude, vertically, horizontally, symmetrical, fraction, projected, curve, series.

Business Terms—fiscal, trade, commercial, prices, guaranteed, balance, wealth, dealer, cash, spending, bank, vaults, insured, retailer, producers, operating costs, over-head, buy, delivery, expense, sales, refunding, obligations, payment, account, security, capital, interest, profit, income, revenue, credit, accounting, security, investigate, percentage, checks, par, cost, production, product, payments, tax, premium, principle, stocks, bonds, surplus, banking, bankrupt, finance, contract, sell, loss, dividend, value, tax payer, syndicate, stock company, pay, bills, due.

Measures and Money—tons, feet, yards, miles, dollars, ster-

ling, franc, cord, currency, dozen, inch, ounce, quart, money, pint, 5 ft. 4, currencies, pound, mark, lira, krone, bank notes, tonnage, 40 gals., 12,000 sq. miles, 7 ft., 48,000, 2000, 6,937,665, units, 18, 20%, $40, $10, eleventh, ninth, thousands, 2:10, first, $250,000,000, 8,000,000, 45,000,000, $1,627,000,000, 51.9%, hundreds, three-quarters, 3/4, 1/4, one-fourth, 4, 11/8, 11/2, 21/2, 8, 1/3, 1/6, 7⅛, 50%, 25%, 26 cents, 10 ct., 1879, 18, $2.00, No. 16, Oct. 15, 1921, 1728, July 14, 1914, third, millions, billions, 40%, Nov. 11, 1918, June 28, 1919, 3rd, 31st.

Problems—60 dishes for 30 cents, 10 lbs. from a bushel, 500 shaves for a dollar, two days' work in one, earn a dollar in an hour, 3 for 25 cents, few cents a gallon, one of the two men, 10%-30% discount, 20% off.

SELF-TAUGHT ARITHMETIC FROM THE AGE OF FIVE TO THE AGE OF EIGHT[1]

By Sophie Ravitch Altshiller Court

While getting acquainted with the outer world through his senses, a child learns to abstract the facts, to classify them, to evolve by induction certain rules governing this outer world and to generalize and to further abstract them by deduction. The half-conscious processes gradually become clear to his mind, and he consciously pursues his investigations until he is pleased with his results.

Just such processes in the workshop of a little boy's mind did I try to observe, and the present paper is the result of this observation. The concepts under discussion here are those connected with number, space and time, and their development will be traced here from the age of five years to the age of eight years and two months.

The little boy under discussion is a normal, healthy, lively child. Outdoor play is his greatest delight, and he likes the society of other children. He began to learn to read at the age of five and a half, but did not become a reader of books until the age of seven years and four months. However, he was read to from the age of three and loved to listen.

He entered the public school—the second grade—at the age of six years three months, was promoted to the third grade in due time, but a month after the beginning of the school year was made to "skip" a whole grade and put into the fourth upon his own insistent request and bitter complaints that "there is nothing to do in the third grade" and that "they teach second grade work there" (his way of putting that he does not learn anything new, though other children were finding the third grade rather difficult). In the fourth grade he soon took his place among the very best in all subjects.

His I. Q. was 135 at the age of three and a half, and 143 at the age of six.

At the age of five years and one month this little boy A. had the following equipment in the realm under discussion:

He could count abstract numbers in their successive order up to a million, as correctly and rapidly as adults do; objects

[1]Read in part before the Oklahoma Academy of Science, February 21, 1922.

with equal facility; by tens to a thousand, by twos to twelve easily, to twenty with effort. He had a clear idea about all numbers up to one hundred, i. e., knew well which is "more" and which is "less"; could guess with a fair degree of accuracy the number of objects (*e. g.*, cows in a pasture) by sight, without counting, within twenty or thirty, also ages of children up to ten or twelve. Was beginning to count money. Could add and subtract within ten without counters fairly well, with counters up to twenty and somewhat above. Could read numbers of two digits, but was not sure of his 'teens (14 and 41 particularly gave him trouble). Could *not* write any numbers or figures except *one*.

Could tell time in hours, quarters, halves, and knew five and ten minutes. Knew seasons very well, months fairly well, days of the week very well.

Knew pint and quart very well.

Understood halves and quarters of whole units.

All this information he had obtained by inquiries, discoveries, observation and voluntary practice, and the methods used by him are analyzed in my article "Numbers, Time and Space in the First Five Years of a Child's Life." (PED. SEM., March, 1920.)

Let us now see how his mind continued to grow in this direction.

At the age of five years and six weeks (two weeks after the above inventory of his arithmetical stock was taken) he once came to me, saying:

"Listen, what I can say in numbers: '5, 10, 15, 20.' "

"Well, well!" I exclaimed. "What is it? How do you count?"

"I don't know," he answered; "5, 10, 15, 20."

"Well, go on," I urged.

But he only repeated, "5, 10, 15, 20."

I was interested. "Can you go on?" I asked. "Say 25."

He then said, "25, 30."

Seeing that he stopped, I supplied "35," and he said, "35, 40." I again supplied "45," and he said, "45, 50, 55, 60," and stopped; "65," was again my contribution, and he said, "65, 70, 75, 80, 85, 90, 95, 100. Heeee . . . . I can count that way to a hundred! Is that by fives?"

"Yes," I said. "How do you know?"

"I don't know how," he answered, and he counted in a sing-song, listening to the sound of his own voice with enchantment, "5, 10, 15, 20."

I tried to help him—needlessly, I see now. "Try to find out," I suggested; "five and how many more make ten?"

But he said, "No, listen; '5, 10, 15, 20,' " with the same sing-song.

"Well, go on then; 25."

"I know, but I don't want to. Listen; '5, 10, 15, 20; 5, 10, 15, 20' " (sing-song). Seeing that he liked the rhythm of it, I interfered no further, and grew tired hearing him repeat the same four numbers many times almost without stopping.

A few hours later he counted again by fives up to twenty, then interrupted himself, counted his fingers of one hand, then added the fingers of the other hand, and exclaimed: "Yes sir, it *is* by fives!" He then added to his ten fingers my five and counted them up. Then, without actually counting his fingers, he raised one hand, saying "five," then his other hand, saying "ten"; I raised then my one hand, and he said "15"; my other hand made him say "20"; his father raised his hand, and "25" came forth from A.; and when we all had both hands raised, A. shouted "30," with sparkling eyes.

I do not know why he suddenly began to count by fives. But he continued practising it, gradually increasing his scale, until three weeks later I heard him count by fives up to two hundred; and after that I heard him often do the same, every time without anybody's suggestion or evident provocation. This lasted for about a month, after which counting by fives occurred at long intervals, but was his firm possession.

At the same time he often counted by tens and enjoyed "the joke" of saying, after "ninety"—"tenty," "eleventy," "twelfty." While counting by tens, he often was unconscious of the fact that it was by tens.

He counted also by twos, and at the age of five years two and a half months could count by twos well up to fifty, and enjoyed doing it. At the age of five years nine months he could count by twos and fives as well as any adult person, by threes and fours to twelve, by sixes to eighteen.

The processes by which he learned computation were not so easy to observe as his counting was. He never practised computation assiduously, never seemed to be absorbed in it for any appreciable length of time.

He never played "store" until five years and three months old, when he suddenly arranged his "store" on two chairs and invited us (his father, mother and grandmother) to be his customers. But he announced that his store is like a library—you must return the goods after having used them for some time. Fingers served as money. Later on he used pieces of cardboard as substitute money. On the first day

the store opened he correctly gave change in following transactions: 10c. — 8c.; 11c. — 8c.; $1 — 1c.; 10c. — 6c.; etc. After this he kept his store rather often, almost exclusively on rainy days, for some five or six months. Once, two and a half months after its inauguration (age five years five and a half months), I "bought" two articles for 3c. and 4c. respectively and "paid" a "dime." He could not tell at once how much change he owed me, and I left it with him to deliver the goods and bring the change. But the transaction was evidently too complicated and was never brought to an end; and though, later on, on the same day, he gave me easily change from 15c. upon my purchase of an article for 3c., yet he apparently found change-giving troublesome that day, for he made a rule that customers must pay the exact amount, and no change is given. The rule, however, was forgotten next day and was never revived. He played store always upon his own initiative, but more often with us as customers than with his playmates.

When he was five years and four months old, I overheard the following conversation between A. and his playmate R.:

R. asked him for some pennies which he had given A. earlier in the afternoon. A. gave him five pennies.

R. Don't you know there was more of 'em?

A. How many more?

R. Well, more. I don't know how many, but there was a lot.

A. You had thirty—remember, I counted them? But you took away two; so I had twenty-eight.

R. Well, give me more.

A. How many?

R. I guess I had nine afterwards.

A. But I already gave you five.

R. Well, give me the rest. I had nine, I think.

A. Then you want four more. But I had twenty-eight; where are the rest?

Another time I surprised the two boys in the act of competing with each other in addition of small numbers; they asked me then to give them questions. I asked them: $3 + 4$; $2 + 6$; $5 + 3$; $8 + 6$; $20 + 20$; if you have twenty, how many more will make thirty; all of which A. answered correctly to the admiration of his friend. A. was then five and a half years old.

For about five months—between the ages of five years four months and five years nine months—A. would spend much time writing and solving addition problems of his own

with his number blocks and often copying them from his blocks with pencil on paper, in a neat column, thus:

$$\begin{aligned} 3 + 4 &= 7 \\ 8 + 6 &= 14 \\ 12 + 12 &= 24 \\ 18 + 4 &= 22 \end{aligned}$$

Sometimes he would ask me to help him solve these little problems of his own making. But with the advent of spring these exercises were abandoned.

After he entered school (at the age of six years and three months), his spontaneous interest in computation began to assert itself at still greater intervals.

Between the ages of five years and five and a half, A. would sometimes ask me to prepare for him "columns of figures," i. e., additions to work. I would typewrite the little problems, and he would typewrite the answer—with painstaking accuracy putting his figure exactly opposite the equality mark. Once, when five years four months old, he asked me again for these "columns"; the typewriter being occupied, I offered to use the pencil. I did not know then how many figures he could write; he would practise writing them now and then on his slate, on blackboards whenever he had a chance, on sidewalks with chalk, on paper with pencil—every time upon his own initiative and choosing the particular figure himself. I wrote now in pencil:

$$\begin{aligned} 1 + 0 &= \\ 1 + 1 &= \\ 1 + 2 &= \\ 1 + 3 &= \\ 1 + 4 &= \end{aligned}$$

etc.

and he wrote the answers neatly and correctly, in large, clumsy figures, but very distinctly. He was not sure of his figures yet, and used mine as models. From that time he began to practise writing figures more often than before.

At the same time (age five years four months) he taught himself to read numbers of three digits—suddenly, while making out "tickets" for a game of his invention. He was numbering these tickets—selecting numbers for them at random, it seems—and came to me, asking, "How do you read 135?" When I answered him, he forgot his "tickets" for a while and began to practise reading numbers, opening large books on my desk and reading the page numbers. From then on it became his pleasure to practise reading numbers of three digits quite often, for several days. Once, when six years one month old, he asked me how to write three

thousand. When I answered him, he wrote it, and then exclaimed: "Oh, mamma, you know what I'll do—I'll add another zero and it'll be thirty thousand, won't it?" How he came to such a conclusion, I could not tell.

In a similar way he became interested by chance in odd and even numbers. Once, when five years and two and a half months old, he was with us when we were looking for a certain house number. "Maybe it is on the other side," he volunteered a suggestion. "No, dear, there are even numbers there, and we are looking for an odd number." "What do you mean?" "Well, you don't know about odd and even numbers yet; I'll tell you all about them when we come home." But he would not be put off and begged so much for an explanation that I told him then and there what odd and even numbers are, whereupon he began to practise distinguishing them, until I grew tired of listening to him. But when I mentioned to him odd and even numbers two months later, he had forgotten all about them. As soon as I began to explain it to him—upon his request—he recalled the former occasion and since then has been familiar with the concepts and with the terms.

His measuring passion, which had seemingly disappeared after his fifth birthday, reasserted itself some two months later, and he began to measure with conscientious exactness not only the length and width of floors, tables, walls, rugs, etc., but also the depth of milk, soup, water—with a fork, a spoon, a stick, or with his hand. And for almost three years now it has been his delight to measure the water in his tub before taking a bath, often trying my patience by the slow and attentive measuring and by comparing the depth of his bath to the depth of the water in the basin, and so on.

Once, at the age of five years and two months, he noticed the divisions on my glass measuring cup, and asked me about them. I told him that the cup is divided into quarters on one side and into thirds on the other, but had no time to discuss it with him or to show him the divisions distinctly. He did not return to the subject until some six weeks later. For over a month after this he was studying the thirds in the cup, trying to fill just one third of it, then one quarter, then two quarters, then two thirds, etc.; comparing thirds with quarters and finding out, which is more; finding thirds of whole units—of an apple, of a sheet of paper, and so on. Having thus familiarized himself with the third, he added it to the store of his knowledge, and used it in his general measuring activities. Once, at the age of five years four months, he pointed out to me that three fourths are more than two

thirds. "How do you know?" I asked. "I saw on your measuring cup," he said; "why, look, you can see for yourself."

This kind of exercise has always been fascinating to him, and it is interesting to watch how he picks out the successive stages and stops at each long enough to master it. He soon began to compare the capacity of cups and other utensils and especially delighted in it at the age of five years nine months. Weighing on the household scale, measuring with a tape measure or with a yard stick, trying to guess the exact size or weight and then verifying it—all these are his favorite pastimes now, when he is over eight years old, as at five years nine months. The exactness of his measurements often brought him to the use of fractions, and at five years nine months he knew besides the above fractions also one-eighth and one-tenth. At the age of seven and a half he understood any fraction with the numerator one, but still did not know the term "fraction" or how to write it, except ½. He has since learned a little about fractions in school.

His measuring passion extends to reading the thermometer, telling time, and mastering the musical measure.

He taught himself to read the thermometer at the age of six, but not until the age of seven years and four months did he ask insistently about the construction of the thermometer.

At the age of five years and one month he used to tell time in the following manner: "Five minutes after a quarter after nine"; "ten minutes after half past three"; "three minutes before seven." Six weeks later he began to tell the time in minutes—"twenty minutes after eight"—but the new stage naturally made him for a while very slow in figuring out the time.

The musical measure has a fascination for A. At the age of six and a half he was given a few piano lessons, which, however, were soon discontinued. But he often likes to count the values of any notes he may see. At the age of seven years and four months he received a new gift—music blocks. This educational toy absorbed him for several days entirely; but he almost exclusively practised on it the different ways of making a measure of 4/4 out of notes of different values.

At the age of six years and four months he became interested in geometric figures. He already knew the circle and the triangle somewhat vaguely, and began to study them now with the same intensity with which he studied fractions and everything else. For about four months he was busy trying to trace and draw a circle, a triangle, a square, a rectangle,

and keeping a "shop," in which he made these figures "to order" out of clothes pins and out of cardboard.

But the geometrical forms interest him only occasionally and not as deeply as the other aspects of space—quantitative (measuring) and geographical (orientation and description). I have already discussed his passion for measuring. As to his intense interest in geography, it presents so much material that it is best to leave it for a special discussion. Geography in all its aspects has had a special fascination for A. from the age of four and a half, and ever since he has been accumulating a vast amount of knowledge in this realm—by observation, by original thinking, by questioning adults, by studying maps, and, after he reached the age of seven years and four months, by reading.

As we have seen above, he similarly, by his own inquiries and investigations, made progress in his arithmetical knowledge. At the same time he continued to give proof of his interest in speculation. Here are a few examples of his remarks and reactions in this realm.

At the age of five years four months he once remarked: "Papa, isn't it funny? A dime is smaller than a nickel, isn't it?" "Yes," said his father, "it is smaller; why is it funny?" "Well, a dime is smaller, and yet a dime is more than a nickel. Funny! Ha, ha, ha!" Three days later he said: "My ring finger is longer than my pointer!" "How do you know?" he was asked. "I see by the shadow."

At the age of seven years nine months he once asked me, after having been already tucked in for the night: "If a year had to live between ninety and a hundred and ten years, how many years would a month be to a year?" I could not understand him at first. He explained: "Suppose a year is a person; suppose this person lives a hundred years. How long would then a month live? Now do you understand?" I did understand; he wanted to find the ratio between the year and the month. I said then: "I think I do understand. But tell me, what is your answer to this problem?" "My answer is eight or nine years—see, eight times twelve equals ninety-six, and nine times twelve is one hundred and eight. That is the way I have been figuring." He had discovered the ratio meaning of numbers. (See Thorndike, "Psychology of Arithmetic," p. 2 to 4.)

Another time, five days after his eighth birthday, at supper, the following conversation took place:

A. Mamma, what people count by twelve?

I. What do you mean?

A. Well, like we count by tens: ten, twenty, thirty.

I. Why should they count by twelves?

A. Because so many multiplications meet at twelve: two times six, and six times two . . . and three times four . . . and four times three, and one time twelve . . . and twelve times one. Let's see: six of 'em.

I. And how many multiplications meet at ten?

A. Well, it's two times five . . . and five times two . . . and one times ten, and ten times one . . . oh, four! You see, mamma, with us twenty-four is an odd number, out of the tens, I mean; and with those people twenty would be an odd number, out of their twelves.

Thus he had stumbled upon the arbitrariness of the decimal system and some possible advantages of the duodecimal system. To this he was perhaps prepared by the knowledge of the early stages in the history of counting, especially of primitive people counting on fingers and Indians using their fingers and toes for counting and calling twenty "one Indian," forty "two Indians," etc. I had told him about it upon one occasion, when he was seven years seven months old, and he was then greatly amused by it.

His speculations about time are also very interesting. He once heard the expression "forever and a day," and laughed over it, but did not analyze it at the time. Several days later he used it himself, but stopped suddenly and said with a laugh: "Forever and a day! Why do they say that? If it's forever, then there are no more days!" He was then six years seven months old.

He has always talked about death rather often, but never seemed to be impressed by it emotionally at all. He is not afraid of it, does not seem to be inspired with awe or to feel keenly its mystery, and never, until the age of seven years four months, asked what becomes of people and animals after death. But he knows that everybody must die, and accepts the verdict calmly, but believes that he himself will be an exception. "I will be careful," he said once at the age of six years nine months; "I'll always try to keep well and will never die." When he talks of the great deeds he will accomplish as an aviator, as a fireman, as a fighter, etc., he often says: "Granma will be dead then, she'll die before I get to be big, she is old; you will die when I grow up." These calculations are his own, against my expressing hope of exceptional longevity for granma and of an old age for myself. His own immortality is not always his firm conviction. Once, hearing that I bought a pot of "Wear-ever" aluminum, he was greatly impressed by the name, and said: "This pot will last forever; so it will be mine after you die,

and when I die, it will be my son's." This took place when he was five years seven months old.

But the most interesting of his philosophic discoveries in the realm of mathematical thought are those pertaining to the conception of the zero.

He knew the zero from the time that he knew figures, i. e., from the age of four and a half. He knew that zero meant *nothing*. It had a special fascination for him. He laughed when he talked about the zero; he sometimes would say that we ought to begin our counting with zero, and, at the periods when he was interested in counting, he would often correct himself: "One, two, three,—no, I must start with zero; zero, one, two, three." He liked to play: "Here, mamma, I give you zero apples," or: "You may have some of my blocks," and, in a whisper of stage directions, "Ask how many." Then, when I asked, he would answer with a burst of laughter, "Zero, that's how many." These jokes he still likes to make, but they amused him especially just after his fifth birthday. Soon after he taught himself to write figures, he once, at the age of five years five months, brought me what he called "a surprise"; this was the following, written laboriously on a piece of paper:

$$0 + 0 = 0$$

He had been practising, as I said above, little additions on the typewriter since the age of five, and now, that he knew how to write figures, he enjoyed what he called "the joke."

Before long he found another use for the zero. This was at the age of six years eight and a half months, when he was already in school, second grade, second semester. Relating to me an incident in school, he said: "J. did not know how much is two from eight—no, eight from two—no, which is it? Let me see. Ah, it's two from eight." "Can you take away eight from two?" I asked. "No," he laughed, "you can't; well, it would be zero; no, less, it would be six below zero; that's it, six below zero!" This idea of "six below zero" pleased him greatly, and he came back to it several times the same evening and next day. On one of these occasions I told him that this is really the way to count in similar cases, and that we don't say "six below zero," but "minus six." From then on he began to delight in using negative quantities, and for several days after that I would find on sidewalks, steps, barn walls, etc., written in chalk, and also slips of paper with pencil on them: $4 - 3 = 1$, $3 - 4 = -1$, and other problems of this sort.

After a long interruption in the use of negative quantities, he once, at the age of seven years seven months, said, while

picking up his blocks and getting ready to go to bed: "Mamma, ask me subtractions, will you? Say, suppose, how many are eight from thirteen?" I agreed, but after one or two problems he said in a lower tone of stage directions: "But put in minuses too. You know, when the answer is 'minus five,' for instance."

I asked him: 13 — 7; 15 — 9; 21 — 8; 23 — 15; 11 — 6; 6 — 11; 15 — 8; 8 — 15.

A., in a lower tone: "You make it too easy; not the numbers are easy, but you arrange them so easy. You shouldn't ask 15 — 8, and right away 8 — 15, see?"

I complied with his request, and found that he had decidedly more difficulty with the combinations themselves than with the pluses and minuses in the answers.

Now, at the age of eight years and two months, he still considers it a great joke to use negative quantities, and sometimes still uses his own term "below zero," but usually says "minus." He likes the negative quantities; they belong to the fascinating realm of "tricks."

Sometimes his father or I show him other "tricks"—arithmetical jokes. He delights in them. Once, when he was seven years seven months old, his father showed him that 12345679 x 9 gives 111111111; then, after A. verified this and showed it to others with glee, his father told him the next evening to multiply 12345679 by 18. The answer was 222222222. When, after having performed the multiplication, A. came to his father with the answer, he said: "Next, I guess, you will make me multiply the same number by 27." "Why?" asked his father, taken aback, "and what would come of it, if I did?" "I would get all threes, I guess; and by 36 will come out all fours."

Once he found a new "trick" himself. He was working on his long division problems—he was then seven years nine and a half months old. These problems were assigned to him from school, which happens very seldom here. He was working in his room, alone. Suddenly he came to us, to the sitting room, in happy excitement:

"See, I found an easy way to prove a long division. No multiplication, only addition."

And he showed us that, since, in the process of long division, you multiply consecutively the divisor by each digit of the result, you can add the separate products, add to them the remainder, if any, and you ought to have the original number (the dividend).

I said: "But you make so often mistakes in drawing

down the figures—you either miss one, or draw down twice the same figure."

"Well," he answered quickly, "that would show in my proof; the answer would not agree, would it?"

Once (age five years five months) he suggested, when I agreed to play with him any game he wished: "Can we play 'guessing numbers' like we play 'guessing words'?" Thereupon I proposed the following game: one of us has a number in mind, the other guesses it by means of the following questions: "With how many figures do you write it?" and then, within the limitations the answer gives, "is it more than . . . . ," "is it less than . . . ?" This game met with enthusiasm on his part, and for several months he would often insist that we play it. Once his father, hearing us play this game, said: "I have a number in mind; it is not more than eight and not less than eight." A.'s eyes sparkled, and he exclaimed: "It is eight then," and he laughed heartily.

Another time, when A. was almost five and a half years old, his father asked him to guess a number of two digits, the sum of which is two (stating this problem in simpler words). A. guessed: 11 or 20. Then his father said: "And if the two figures make together three?" A. thought a while and said: "21 or 12"—he missed the 30.

One of his remarks about numbers remained incomprehensible to me. At the age of five years nine months he insisted that 6, 8, and 9 are against all other numbers, and, upon my inquiry, explained: "Now, for instance, if there was war among numbers, if the numbers had war, then six, and eight, and nine would be against all the others; yes, and 16, 18, 19, too, and 26, 28, 29 too, and 36, 38, 39, and so on, and so on." I don't know whether he meant figures or numbers. He repeated it quite often for some two or three weeks. Now he has forgotten all about it.

With all these independent observations and discoveries in the realm of arithmetic, A. is not a brilliant pupil in school as far as arithmetic is concerned. Arithmetic in the first four grades consists in computation. He grasps every new stage with great ease and clearness and is above the average in accuracy. But he is even below the average in speed. This is perhaps due to lack of practise, partly because of his having skipped the third grade, partly because he never does any more practise in the four principles than the minimum required in school. Formal school arithmetic does not arouse the enthusiasm which his own discoveries awaken, and he very seldom feels the impulse to practise any of the processes he is taught in school. Slow, painful effort never has been

his conscious choice. He may concentrate on one task for hours and even days, but only in case of inspiration, when he is interested in and fascinated by the work; and in such cases, it seems, it is the process itself that absorbs him, not the aim to be attained.

Analysis of the Above Facts

If we accept Thorndike's classification of the number concepts,[2] we can readily see that the series meaning was the first A. began to study. At the age of three to five he was busy learning to count to a thousand and beyond, and was evidently not ready to attack numbers from any other point of view, except perhaps the collection meaning to a certain degree, for he resisted all my attempts to distract his attention from counting.

Counting, i. e., naming numbers in their successive order, was his delight from the age of three, and he would count while playing with his blocks, while taking a walk with me, while digging in the yard, while being dressed, etc. Often, at these occasions, instead of counting, he would improvise little songs or would talk in a rhythmical sing-song, but usually without coherence or any discoverable meaning. Evidently, counting answered the same need as the songs and other improvisations—the need of self-expression in rhythm. After the age of six and a half the musical and poetical outlet for this need gradually began to gain over the numerical. Now, at the age of eight years and two months, his singing and talking to himself have almost entirely superseded the counting. But there is a new element in his improvisations—the element of criticism; he often interrupts himself and tries to trace a bit of melody or to improve a rhythmical line.

It seems that in his case the period between three and five was the spontaneous counting period, which D. E. Phillips says all children go through and in which counting is fundamental.[3] Phillips maintains that multiplication developed out of counting. In A.'s mental development we may see the rudimentary beginnings of multiplication; witness his discovery of counting by fives.

Whether or not this counting by fives, as also counting by twos and by tens, may be considered as learning the series

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[2]"The Psychology of Arithmetic," by Edw. L. Thorndike. The Macmillan Co. p. 2-4; the series meaning of number, the collection meaning, the ratio meaning, and the relational meaning.

[3]D. E. Phillips. "Number and Its Application Psychologically Considered." Ped. Sem., 1897, quoted by Thorndike (work cited above).

meaning, it is evident that A. was then arranging numbers into series of two, of five, or of ten. But I think it worth while pointing out that he never attacked spontaneously, of his own accord, the threes, the fours, or any other series of this kind—even after he was made to count by threes, fours, sixes, etc., in school.

After his interest in counting had reached its climax, came his all-absorbing interest in printed figures and in learning to read numbers of two digits—a phase clearly standing outside of the above classification.

The collection meaning was developing gradually and parallel with the series meaning, but with not as prominent a place in A.'s consciousness and probably more influenced by my remarks, questions and games. But, whether as a result of training or not, A. had the question "how many?" well in hand long before he reached the age of five, when it began to claim his spontaneous interest; he then would often not only count the objects that came within his reach, but would try to guess, at sight, how many there were of them, and then, if possible, verify his estimate by counting.

The ratio meaning was attacked by him to my knowledge only a few times—in the question about the ratio of a year and a month and very few more remarks of this kind.

The relational meaning has been obviously taught in school, through the drills in computation. He now (eight years two months) often, instead of numbers, uses descriptions like these: "Please give me eight and four crackers for our play party—no, five and seven—no, no, ten and two; may I have glasses? I want two times three." I must remark here that he often, in playful mood, uses some roundabout way of speech, or else mutilates his English in certain ways, or uses spelling instead of plain talking; sometimes he uses descriptions instead of simple words, like: "that brown thing that is made by the baker out of dark flower"—instead of "rye bread."

While he taught himself the printed figures when four and a half years old, he did not become interested in written figures until some two months later and did not learn to write them until almost five and a half, as we saw above. The muscular effort of handling a pencil was too great for him; even now, at the age of eight years two months, writing, especially with pen and ink, is a great hardship. And yet, he played with pencil and crayons from the age of two.

What processes of arithmetical thought and which facts of arithmetical knowledge does he become interested in spontaneously? The following table will answer this question.

TABLE 1

Information Obtained by His Own Discoveries or through Insistent Inquiries					Information Obtained through Outside Influence			
Spontaneous, Intense and Lasting Interest		Spontaneous but Passing Interest			Calling Forth Intense and Lasting Interest		Interest Momentary	
Age	*Subject*	*Age*	*Subject*		*Age*	*Subject*	*Age*	*Subject*
3 yr. 5 mo.	Counting (1 to 50)	7 yr. 9 mo.	Ratio		3 to 4 yr.	Computation	Any time	Every new step not shown in other columns
3 " 8 "								
4 " 3 "	Counting (50 to 1000)	8 yr.	Duodecimal system		4 yr. 7 mo.	Computation		
4 " 6 "					5 " 2 "			
5 " 1 "	Counting by 2	7 yr. 9½ mo.	Discovery of a new test in long division		5 " 5 "	Odd and even nos.		
5 " 4 "								
5 " 6 wk.	Counting by 5				6 " 6 "	Musical measure		
5 " 4 mo.					6 " 11 "			
4 " 9 "	Counting by 10				7 " 4 "	Musical measure		
5 " 4 "								
2 " 10 "	Measuring				7 " 7 "	Musical measure		
3 " 6 "					8 " 2 "			
5 " 4 "	Measuring				7 " 6 "	Long division		
8 " 2 "					8 " 2 "			
3 " 6 "	Halves				Always	Arithmetical games		
3 " 9 "								
3 " 9 "	Quarters							
4 " 2 "								
5 " 3 "	Thirds							
6 "								
4 " 5 "	Figures and reading nos. up to 30							
4 " 10 "								
5 " 4 "	Reading nos. to 100							
5 " 4 "	Reading nos. of three digits							
6 " 2 "								
5 " 3 "	Learning to write fig's							
5 " 6 "								
5 " 6 "	Doubling small numbers							
6 "								
4 " 4 "	Telling time							
4 " 10 "								
5 " 2 "	Telling time (new way)							
5 " 6 "								
4 " 5 "	How long is a minute?							
4 " 7 "								
4 " 6 " and since	The zero							
6 yr. 4 mo.	Geometrical figures							
6 " 8 "								
6 " 8 "	Negative quantities							
7 "								
7 " 6 "	Rediscovery of negative quantities							

An examination of this table shows that, generally speaking, he was learning to count up to the age of five, and to reason and measure since. The philosophical side of arithmetic

(the zero, the negative quantities, the decimal and duodecimal systems) has a peculiarly strong appeal for him. Of the four principles long division is his favorite.

Let us now rearrange this table and see which of all these accomplishments he would have acquired by this time—in the first four grades of public school—if he had not taught himself at all.

Table 2

Would Have Learned in the First Four Grades	Would *Not* Have Learned in the First Four Grades	Would Have Learned Less Thoroughly without the Observation and Practice He Actually Had
Counting by 1, 2, 5, and 10	Telling time	Measuring
Reading numbers of two and three digits	How long is a minute?	Halves
Writing figures	Geometrical figures	Quarters
Computation	Negative quantities	Thirds
Doubling small numbers	Ratio	Musical measure
The significance of the zero	Duodecimal system	
Odd and even numbers	Test of long division by addition	

On the other hand, if he was left to himself and only encouraged and helped out in his own arithmetical undertakings, he would in all probability know nothing by this time of the four fundamental operations; or, if even he did become acquainted with them, he would not have acquired sufficient skill, for long division is the only one he now practises of his own accord.

A.'s interest in arithmetic, so intense at the age of four, is not uniform and not steady. In the period covering the first five years of his life I noticed a rise and fall of his arithmetical interest in accordance with the seasons. This seasonal influence seems to have been much less pronounced between the ages of five and eight. But on the whole his interest in arithmetic may be said to have somewhat waned; many other intellectual interests claimed now his attention. Of these geography holds the foremost place. General reading is another great rival to the arithmetical interests. Play, too, is now more complicated and more absorbing than it had been before the age of five, and very often the play is organized by himself and presents its own problems which bring out reflections on human relations, psychological observations, etc. Thus the second period—that between the ages of five and eight—is characterized by much less arithmetical inspiration than that before five. There may have

been another reason for this: school arithmetic may have satisfied some of his appetite in this direction.

However, though his interest in arithmetic was not exclusive during the period under consideration, it sometimes attained quite remarkable heights. I have not been able to find just what spurred it on. But, as before, bad weather which keeps him from free play outdoors is more likely to bring on "an arithmetical spell" than sunshine and access to playmates.

Table 3 (chronological table) shows a gap of about seven months between ages five years nine months and six years four months, then another one between six years nine months and seven years seven months, and a third one of about three months between seven years nine and a half months and eight years five days.

TABLE 3 (CHRONOLOGICAL)

5 yr. to 5 yr. 6 mo.		"Columns" on typewriter
5 " 6 wk.		Learning to count by fives
5 " 2 mo.		Measuring depth of liquids
5 " 2½ mo.		Odd and even numbers
5 " 2½ "		New way of telling time
5 " 3 "		Playing store
5 " 3½ "		Thirds
5 " 4 "		Reading numbers of three digits
5 " 4 "		Three fourths more than two thirds
5 " 4 "		"Columns" in writing
5 " 4 "		Dime vs. nickel—value vs. size
5 " 4 "		Length of fingers by shadow
5 " 5 "		0 + 0 = 0
5 " 5 "	and before	Counting by twos, fives, and tens
5 " 5 "		Guessing numbers—game
5 " 6 "		Competing with R
5 " 4 "	to 5 yr. 9 mo.	Addition on number blocks
5 " 7 "		Calculations as to probability of surviving
5 " 9 "		6, 8, 9 against all other numbers
6 "		Reading thermometer
6 " 1 "		Writing 3,000 and 30,000
6 " 4 "		Geometric figures
6 " 6 "	and since	Musical measure
6 " 7 "		"Forever and a day"
6 " 8½ "		"Six below zero"
6 " 9 "		His own immortality
7 " 7 "		Negative quantities
7 " 7 "		12345679 by 9, by 18, by 27, by 36
7 " 9 "		Ratio
7 " 9½ "		New proof of long division
8 " 5 days		Decimal and duodecimal systems

In all three cases the gap begins in early spring; the awakening of nature claims more attention than arithmetical facts and speculations, and free play in open air and sunshine appeals especially by its newness and the contrast it affords

to the predominantly indoor life of winter. But his interest in arithmetic has seemingly not returned for two successive summers, as it used to before the age of five. This conclusion would not be quite correct, however. In his outdoor play he grew now more independent of me, was away for longer periods at a time, and whatever of arithmetical discoveries and manipulations he may have been engaged in remained unknown to me. And, again, it is likely that quite a few of his efforts were checked on account of the impossibility to turn immediately to anybody for help. Occasionally he would speak to me about some of his calculations, asking whether his result was correct, or, as in the case of writing 3,000, would ask for help. On the occasion just mentioned I found out that he played "money" with other children, that milk caps represented dollars, and that he introduced an improvement by beginning to write "checks." These money games evidently gave him much material for practise in computation, and he may have thus done more arithmetical work that summer than during previous summers; but I have no record of it.

My record is also silent regarding the fall and early winter of his eighth year (ages seven years four months—seven years seven months). That fall was eventful inasmuch as A. then "skipped" into the fourth grade. For a few weeks he was obliged to study at home the third-grade arithmetic. He was then, so to say, overfed with arithmetic. He easily grasped the processes of addition, subtraction, and multiplication, was very much interested, particularly in the "borrowing" in subtraction, but it was obviously a growth from without, one imposed upon him, and not a development from within, as it had been before, when he himself stumbled upon arithmetical discoveries, asked for explanations to questions raised by his own mind, and practised to satisfy his own inner demand. There was now no time and no need for self-teaching. He covered the ground rapidly and easily; he was anxious to be in the fourth grade and spurred on by success. But these were external stimuli, foreign to the subject itself, not his own intellectual need. Accordingly, though he made remarkable progress in arithmetical knowledge during these few weeks, yet there was nothing to add to his record of self-teaching even for about two or three months after he definitely became a pupil of the fourth grade and all home lessons ceased.

In school, arithmetic has never been his favorite subject; he likes geography and reading better. Probably this is due to a large extent to his pride; he excels in these two subjects.

INTELLIGENCE LEVELS AND SCHOOL ACHIEVEMENT OF THE WHITE AND THE COLORED RACES IN THE UNITED STATES

By Frederick Lamson Whitney, Ph. D., University of Minnesota

Practically all studies of race psychology have been made within thirty years, and those of most value come within the last ten years. The first attempt to use objective methods was in 1891 on the Cambridge Anthropological Expedition to the Torres Straits. During the twenty years following, the four or five studies that were made dealt with reaction time, association, and memory tests, and with teachers' estimates of mentality.

In 1910, Woodworth (16) came to the conclusion that keenness of sense was "about on a par in the various races of mankind," but that when intelligence was tested with the form board differences were noted, the pygmy and the negrito being very low in the scale. In 1913, Baldwin (2) determined that, in a small group of delinquent adolescent girls, the negroes learned in the substitution test a little more than one-half as much as the whites, but made over twice as many errors. The same year, Pyle (12) tested about four hundred pupils in memory, learning, association, word building, and with the ink blot and found that the mentality of the negro is but two-thirds that of the white and that but one-fifth of the negroes reached the average white intelligence. Loram (8) repeated these same tests in 1916 with Natal, South African, pupils and found that the natives were only fifty per cent as efficient as the whites and seventy-five per cent as efficient as the Indians tested.

In 1914, Phillips (11) and Strong and Morse (15) gave Binet tests to small groups of pupils and found racial differences to be present. In 1916, Ferguson (4) tested nearly one thousand grade pupils, white and colored, using a battery of four mental tests, and concluded that "the average performance of the colored population of the country in such intellectual work as that represented by the tests of higher capacity appears to be about three-fourths as efficient as the performance of whites of the same amount of training." In 1918, Lacy (7) and, in 1920, Schwegler and Winn (13) continued the use of the Binet tests with small groups with no new developments of importance.

The I. Q. of Negro Children

Two studies of race differences were reported at the Thirtieth Annual Meeting of the American Psychological Association at Princeton University in December, 1921. Miss Arlitt (1) discussed the constancy of the I. Q. in negro children of chronological ages five to fifteen inclusive. The majority of her 243 cases were found in New Orleans, but about sixty were in the north, near Philadelphia. There were 129 negro boys and 114 negro girls. In social status, 33.7 per cent came from very inferior homes, more than half (58 per cent) inferior, 6.5 per cent average, and 1.6 per cent very superior.

Her conclusions were that the median intelligence quotient for negro children does not remain constant with increasing age as it does with native-born whites. (This latter assumption is, of course, under discussion now.) She found that both median I. Q.'s and twenty-five and seventy-five percentiles decreased with increasing chronological age. The boys were six points inferior to the girls at ages five and six, but beyond these ages no great differences appeared. There were more girls than boys with an I. Q. above 110, and more boys than girls with an I. Q. below 70.

A Test Independent of Training

Many of our measurements of mentality of white and colored children have failed to isolate original nature, and for this reason many have been favorable to whites whose opportunities for the development of native capacities of the kinds tested have exceeded those of colored children. Peterson's study (10) reported at Princeton attempts to provide a measure of intelligence which is based on a learning process quite independent of experience, which involves important higher functions, and which is highly objective in method and results. He takes a rational learning test as approximating these criteria. The method has been published in detail in the *Psychological Review* (1918, 25, 443) and the *Journal of Applied Psychology* (1920, 4, 250). The material consists of the first five letters of the alphabet, with which the first five digits are associated in random order (A4, B2, C5, D1, E3). The problem is to find and learn the numbers of the several letters. They are called in order, and every response of numbers is recorded.

He used 311 white and 315 negro children from seven Nashville schools. The limit of time for the test was forty minutes. Fourteen eight-year-old negro children could not solve the problem with three letters in the time allowed.

The results as to "time" were: (1) 100 per cent of 18 seven-year-old whites surpassed the median of 7 seven-year-old negroes, 99.5 per cent of 108 eight-year-old whites surpassed the median of 127 eight-year-old negroes, 94 per cent of 84 nine-year-old whites surpassed the median of 97 nine-year-old negroes, and 95.7 per cent of 84 ten-year-old whites surpassed the median of 62 ten-year-old negroes.

In "number of repetitions," only 1 seven-year-old negro completed the learning, and 83.6 per cent of 108 eight-year-old whites surpassed the median of a similar group of negroes, 85.4 per cent of 84 nine-year-old whites surpassed the median of a similar number of negroes, and 77.7 per cent of 84 ten-year-old whites surpassed the median of a like group of negroes. The results as to "errors" were that 90.5 per cent of the whites surpassed the colored median in the eight-year group, 89.2 per cent of the whites surpassed the colored median in the nine-year-old group, and 90 per cent of the whites surpassed the colored median in the ten-year-old group. All of our studies of race differences have shown lack of identity of distribution of functions, but in none of them has there been such divergence as that found by Peterson here. In the studies noted below, the per cent of colored pupils who equal or exceed the median white ranges from 10 to 20 only. Apparently overlapping decreases as truly original traits are more fully disclosed.

Negro Intelligence in Virginia

The state-wide survey of the Virginia public schools (5) makes available a large amount of material on negro intelligence which may be compared with white data from the same field of inquiry. The population used consisted of some 16,000 different school children, grades one to nine, about 3000 of whom were colored. General Intelligence Examination Delta 2 was the measure of intelligence used.

In general, it was found that colored pupils in one-teacher rural schools score lowest and white pupils in city schools highest in Virginia. The range of difference was from 25 to 42 points. It was found also that on the whole the distribution of scores for white pupils was wider than for colored pupils, as the average range was 67 points for whites and 59

TABLE 1

Per cent of rural colored pupils who equal or exceed the median score of rural white pupils, in four types of schools in the General Intelligence Examination Delta 2. Six thousand one hundred eighty-four white pupils from eighteen Virginia counties. Colored pupils from eight of the same counties. And per cent of 976 city colored pupils who equal or exceed the

median score of 3,541 city white pupils in nine Virginia cities in the General Intelligence Examination Delta 2.

Groups	Types of Schools					
	Rural One Teacher	*Rural Two Teacher*	*Rural Three Teacher*	*Rural Four or More Teacher*	*Rural Total*	*City*
Grade Three	31.2	27.7	57.7	26.5	22.8	11.2
Grade Four	29.7	26.5	34.4	40.4	21.7	17.9
Grade Five	23.6	13.2	44.7	22.0	17.0	17.3
Grade Six	27.1	37.9	26.8	22.8	18.0	12.4
Grade Seven	18.1	30.9	22.1	15.1	20.3	12.9
Mean	25.9	27.2	37.1	25.3	19.9	14.3

points for blacks. This may mean more possibilities for both mediocrity and for genius in the white race. Ferguson, however, comes to the conclusion (3) that the variability of the two groups in the United States, when all ages and all degrees of blood mixture are considered, is practically the same.

Overlapping of Race Intelligence

Another measure of difference which is often used is in terms of that part of one group which reaches a middle point of the other. Table 1 gives such a measure by grades and by types of schools for good-sized groups of Virginia pupils. In general, it is seen that one-fifth of the colored group equals or exceeds the median score of the white group. The "Total" column shows that elimination in successive grades is most from the upper levels of intelligence, but the difference in two per cent of the distribution between the average of the two lowest and the two highest grades is perhaps not worth consideration. This mortality seems to be greatest in three-teacher schools, and in two-teacher schools elimination is from the other end of the distribution. When the average per cent of overlapping for the four types of schools shown is compared, a fallacy in the tentative conclusion above, that intelligence correlates with size of schools, appears. For the groups of rural colored pupils here considered do not continue to increase in intelligence into four-teacher schools. In fact, there is no difference between one-teacher and four-teacher schools to be noted.

As to white and colored city pupils, it is seen that only about 14 per cent of colored pupils reach or exceed the median intelligence score of white pupils, while in the case of rural pupils 20 per cent did so. Greater differences in intelligence between white and colored pupils are found in the cities than

are found in the rural communities. Nothing very definite can be said about the effect of elimination in successive grades here, although if grades four and five be compared with grades six and seven more of the intelligent negroes seem to have dropped out of school in the latter. And this is, on the whole, what was found in the rural schools also.

These amounts of overlapping agree in the main with those given by Ferguson (4), who was dealing with Virginia children also. He found that in the elementary school 20 or 25 per cent of the negroes equaled or exceeded the average score of the white children. In the high school, the per cent was 30 or 35. He takes as the best index for the intelligence of the two races 20 or 25 per cent.

Intelligence in the Army Draft

During the late war, the various forms of Army Group Examinations Alpha and Beta were used with over a million and a half conscripts, good-sized groups of whom were negroes from both northern and southern portions of the United States. This makes available a large amount of data on differences in race intelligence among adult men which supplement and confirm differences found among groups of school children above. The latest and most complete statement of this research is to be found in volume fifteen, part three, of the Memoirs of the National Academy of Sciences (17).

Data on the quantitative aspect of the negro's intelligence are considered first. But one discriminative checking of intelligence on the basis of differences in skin color was made, any recognizable amount of dark blood classifying individuals with the colored race in all other studies. This was in the case of two battalions of negro recruits who were classified as "lighter" and "darker." The median alpha score for those with lighter skins was found to be 50, and for the darker-skinned recruits it was 30. In beta, those of lighter skin color had a median of 36, and the darker group had a median of 29. Eighteen per cent of the alpha group were lighter, and 82 per cent were darker. In the beta group, 11.5 per cent were lighter and 88.5 per cent darker. Evidently, an increasing proportion of white blood in the colored race increases its intelligence, although a part of the value of this conclusion is lost because of the fact that lighter-skinned groups here used were smaller and possibly selection may have been from the upper ranges of intelligence. But Ferguson's review of race intelligence (3) assigns a distinct advantage in intelligence to a larger amount of white ancestry. His statement is that

"20 per cent of pure negroes, 25 per cent of three-quarter bloods, 30 per cent of mulattoes, and 35 per cent of quadroons equaled or exceeded the average score of the white draft in the army."

TABLE 2

Percentage of final letter ratings in Army Group Examination Alpha on all types of examinations for white and colored groups in the draft.

Letters	*Colored*	*White*
A	0.5	4.1
B	1.7	8.0
C+	4.6	15.0
C	11.8	25.0
C—	19.4	23.8
D	30.4	17.1
D—	31.6	7.0
N	23,595	93,973

In general, the white draft is more intelligent, as measured by means of Group Examination Alpha, than the colored draft. But if the group of southern negroes is omitted, there is not much difference. In particular, the median for foreign-born whites is very similar to that for northern negroes. The spread of the distribution for the scores of the white and colored draft north is practically the same also, from 0 to 189; but that of southern negroes is but about half this distance, and their median is very low (12.4). The difference in intelligence between the native white draft and army officers is comparable to that between southern negroes and northern negroes in the draft.

These statements are confirmed when the amount of overlapping of white and negro distributions is estimated. About 4 per cent of the native white draft reached the median score of officers, and only 2 per cent of the foreign-born white draft reached this median. About 36 per cent of the foreign-born white draft reached the median score in the native white draft, and about 27 per cent of the colored draft north reached the median score of the native white draft. About 42 per cent of the colored draft north reached the median score for foreign-born whites. About 12 per cent of the colored draft south reached the median score for the colored draft north. Only about 3 per cent of the colored draft south reached the median score of the native white draft. The per cent of overlapping of southern negroes and of the native white draft is identical with that of the native white draft and army officers.

The figure here which is comparable to those of the two studies above is that of 27 per cent, which is that part of the

colored draft north which reached the median score of the native white draft. For elementary pupils, the Virginia survey found an overlapping of 15 and 20 per cent, and Ferguson puts the figure at 20 to 25 per cent for both children and adults.

Table 2 gives comparisons of the intelligence of white and colored conscripts in terms of percentage groups according to the literal ratings used in the army. The distribution is on the basis of all types of examinations given; and while the white group of 100,000 is scattered quite normally from A to D—, the negro group of 25,000 tends to gravitate into the lower levels. If the median for the white group be taken as approximately C, only about 19 per cent of the negro

TABLE 3

Distribution of white and colored groups in the United States army according to mental age in the Stanford-Binet examination.

Mental age	*A group of 205 whites*	*A group of 811 whites*	*A group of 403 negroes*
16.0-16.4	1	—	—
15.5-15.9	2	2	—
15.0-15.4	2	3	—
14.5-14.9	3	4	—
14.0-14.4	3	6	1
13.5-13.9	1	1	0
13.0-13.4	5	8	3
12.5-12.9	1	3	2
12.0-12.4	13	25	3
11.5-11.9	10	23	3
11.0-11.4	17	54	6
10.5-10.9	18	54	13
10.0-10.4	29	92	23
9.5-9.9	24	102	34
9.0-9.4	45	141	97
8.5-8.9	15	102	52
8.0-8.4	5	70	55
7.5-7.9	3	22	23
7.0-7.4	4	22	40
6.5-6.9	1	13	20
6.0-6.4	1	7	15
5.5-5.9	0	2	5
5.0-5.4	2	5	3
4.5-4.9			1
4.0-4.4			3
3.5-3.9			1

group reach this rating. In the upper levels, it is noticed that 12 per cent of the white group is rated A or B, while but 2 per cent of the negro group is so rated. At the bottom of the columns, 60 per cent of the negroes are found below C— and but 24 per cent of the white group. The white draft here represented is more intelligent than the negro draft.

A final checking of the quantitative aspect of the negro's intelligence by means of another measure will be found in Table 3. Two small groups are included, about 1000 whites and 400 negroes, who were given individual examinations with the Stanford Revision of the Binet-Simon scale. The white draft here included is more intelligent than the negro draft, as the approximate median age for the one is 10 years and for the other 9 years. There is about a year's difference in the range of the two distributions also, as that for whites is from 5 to 16 years and that for blacks is from 3 to 14 years. About 16 per cent of the negro group reach the middle mental age for the white group, and this again is close to the criterion for the race difference in intelligence above.

Qualitative Aspects of Negro Intelligence

When a discussion of the qualitative aspects of negro intelligence is undertaken, the mass of evidence is not so great as in the matter of the degrees of difference dealt with above. The weight of testimony in those studies which have attempted an analysis of negro and of white intelligence seems to be that so far as differences exist they point to excellence in the so-called higher mental processes in white groups. Further, as pointed out by Peterson (10), the tests used probably take account of many functions outside the realm of original nature and so penalize the colored groups whose learning experiences have been less favorable as far as these functions are concerned. For, when he applied tests which probably isolated native capacities fairly well, he found greater race differences than in any previous studies.

The effect of school experience upon alpha intelligence in the two races as found in the army draft is indicated by Pearson coefficients of correlation reported from a number of recruiting camps. On the whole, the number of years of schooling and intelligence are found to have a high correspondence, but intelligence does not seem to depend upon the length of school experience in the negro group to the extent that it does in the white group, as representative r's are .65 and .59 respectively. And the average of r's for five white groups (exclusive of officers, whose distribution is narrower) is. 63, and of two colored groups both of northern and southern negroes it is .42.

One definite analysis of different types of intelligence found among white and colored conscripts was made at Camp Sevier. The study gives the reaction of 200 white and 200 negro recruits of equal intelligence to the elements of alpha,

beta, the performance scale, and the point scale. The report summarized the study by saying that the data "indicate that the negro as compared with the white man of equal intelligence is relatively strong in the use of language, in acquaintance with verbal meanings, and in perception and observation; and that he is relatively weak in judgment, in ability to analyze and define exactly, and in reasoning."

Such important researches as have been made, then, of differences in amount of intelligence possessed by the white and the colored races in the United States point to the superiority of the white race, as represented by the population studied, the amount of overlapping of the inferior upon the superior race being to the amount of about one-fifth of one group who reach a middle point in the other. Discoveries of differences in kinds of intelligence are not so conclusive, but seem to point to a lower level of activity on the part of most negroes in the more complicated analysis and synthesis of situations, such as is required in successful reflective thinking.

Race Differences in School Achievement

When one turns to the literature of race differences for studies of achievement in school subjects, the list of titles is not nearly so long. But four or five are of sufficient importance to report here. Stetson (14), in 1897, tested 500 white and 500 negro children in memory and made a study of school marks. He found the average scores in memory identical for the two groups, 58.09 and 58.27, but the whites averaged some higher in school marks than the colored pupils, 74.23 and 64.73. In 1913, Mayo (9) made a study of 150 white and 150 colored New York City high-school pupils. He found the two groups practically the same as to variability,

TABLE 4

Median Courtis arithmetic scores, Series B, number of examples correct, in the Natal, South Africa, public schools and in four American city systems.

Groups	Scores											
	Addition Grades			*Substraction* Grades			*Multiplication* Grades			*Division* Grades		
	5	*6*	*7*	*5*	*6*	*7*	*5*	*6*	*7*	*5*	*6*	*7*
Natal, European	4.5	5.7	7.0	5.8	6.9	7.8	4.2	6.2	7.8	3.1	5.8	8.5
Natal, Indian	5.3	5.3	6.7	6.3	8.0	10.3	4.8	4.9	8.7	4.4	5.6	8.7
Natal, *Native*	*2.8*	*3.0*	*3.2*	*4.8*	*6.7*	*7.5*	*2.5*	*4.1*	*4.9*	*2.4*	*3.4*	*5.8*
Detroit	3.9	4.6	5.4	5.5	6.2	7.3	3.8	4.8	6.0	2.7	4.4	7.1
Boston	3.7	4.9	5.6	4.9	6.3	6.9	3.3	4.8	5.1	2.0	3.3	5.1
Butte	2.9	3.4	3.8	2.9	3.4	3.8	4.1	5.0	6.5	3.6	4.3	7.2
Salt Lake City	4.1	6.4	6.9	5.2	7.8	8.8	4.3	5.3	7.1	3.0	5.5	7.7

TABLE 5

Hillegas composition scores of 371 European, 139 Indian, and 402 native pupils in Natal, South Africa, and of public school pupils in two American city systems.

Groups	Grades			
	4	*5*	*6*	*7*
Natal, European	4.1	4.5	5.3	5.4
Natal, Indian	4.1	4.5	5.2	5.1
Natal, *Native*	*2.8*	*3.2*	*3.7*	*4.3*
Butte, Montana	2.3	2.8	3.4	3.7
Salt Lake City, Utah	2.9	3.1	3.8	4.4

TABLE 6

Median quality of handwriting according to the Thorndike scale for European, Indian, and Bantu (native) school children in Natal, South Africa, and for pupil groups in two American city school systems.

Groups	Grades			
	4	*5*	*6*	*7*
372 European pupils	12.9	12.9	13.8	13.9
139 Indian pupils	13.4	14.2	13.8	14.3
407 *Bantu pupils*	*12.2*	*13.4*	*13.6*	*14.6*
Butte, Montana	8.8	8.9	11.6	11.2
Salt Lake City, Utah	10.7	11.1	11.3	12.2

and the colored pupils on the average about seven months older than the white pupils. In general school achievement, but 29 per cent of the colored pupils reached the median record of the white group.

Loram's study (8) will be reported here, as in the discussion of intelligence, to the extent that comparisons are possible with American results. The school subjects of arithmetic, composition, and handwriting give such data.

Arithmetic

Table 4 gives comparative achievement in Courtis arithmetic in terms of the number of examples correct. Bantu (native) pupils do not score as high in the number of examples correct as white pupils in the same schools. This deficiency is greater in fifth than it is in seventh grades in all four fundamental operations. When compared with American pupils, it is seen that South African native pupils score lower on the whole, but come nearer to the level in the public schools of Butte than to that reported for European pupils in the Natal schools.

English Composition

Written-composition ability as scored with the Hillegas scale is shown in Table 5. The compositions written by

native pupils in Natal were poorer than those written by the European pupils in the same schools. But Bantu compositions are very similar in quality to those written in Salt Lake City and better than those of Butte school children.

Handwriting

Finally, the handwriting achievement as checked on the Thorndike scale is compared in Table 6. It is noted that there is practically no difference in handwriting skill between white and native children in the Natal schools. When comparisons are made with American systems, it is found again as in the case of composition ability that Bantu children excel. The difference is quite appreciable with the Salt Lake City system, and striking in Butte.

In general, it may be said that in the drill operations of simple arithmetic African native pupils, as represented by the Bantus of Natal, are inferior to European pupils in the same systems and to American children measured for like abilities. But, in writing simple compositions and in quality of handwriting, their achievement is not very dissimilar to that of European pupils in Natal and is distinctly superior to that of certain groups of American school pupils.

TABLE 7

Scores in Woody addition ability for Virginia white and colored children in three types of schools compared with Woody standards and the achievement in two northern city systems.

Groups	Virginia Grades				
	3	*4*	*5*	*6*	*7*
Virginia rural white, four room and over	8.7	12.1	13.8	14.4	16.1
Virginia rural *colored*, three room	*8.3*	*10.7*	*11.3*	*13.5*	—[1]
Virginia city, second half year	9.4	12.4	14.4	15.2	15.9
	Standard Grades				
Woody standards	11.0	14.0	16.0	18.0	18.5
Pittsburgh mid-year	12.3	14.5	16.0	16.7	—
Seattle system	11.5	14.6	15.7	16.6	17.2

[1]Not enough data to warrant inclusion.

TABLE 8

Standards and achievement of Virginia white and colored pupils in all types of schools in reasoning ability as measured by means of exercise two in the General Intelligence Examination Delta 2.

Groups	Grades					
	3	*4*	*5*	*6*	*7*	*8*
Delta 2 standards	5.0	7.0	9.0	10.5	11.5	13.0
Seven Virginia cities, white pupils	5.0	6.5	8.6	8.3	11.1	12.1
Five Virginia cities, *colored pupils*	*4.0*	*5.8*	*6.6*	*8.5*	*8.4*	—
One-room schools, white	3.2	5.2	7.0	7.7	10.3	—
One-room schools, *colored*	*2.7*	*5.3*	*5.2*	—	—	—
Two-room schools, white	3.2	5.2	7.1	8.2	9.0	—
Two-room schools, *colored*	*3.1*	*4.7*	*6.6*	*5.6*	—	—
Three-room schools, white	3.4	6.3	6.1	8.7	9.8	—
Three-room schools, *colored*	*4.3*	*5.5*	*7.4*	*7.8*	*9.1*	—
Four rooms and over, white	4.0	6.6	7.5	8.8	10.4	—

School Achievement in Virginia

As in the case of intelligence data, the Virginia school survey (5) makes available a large amount of material illustrative of the achievement of the white and colored races in the common school subjects. Scores in arithmetic, silent reading, composition, spelling, and handwriting will be taken for report here. The Woody Arithmetic Scales, Series B, for the fundamental operations and Exercise 2 of the General Intelligence Examination Delta 2 for reasoning were used in arithmetic. Table 7 (6) gives the general level of attainment in Virginia in one of the four fundamental operations which is typical of all. The figure 18.5 is the Woody standard at the beginning of the eighth grade. As Virginia school children have a seven-year program, they should attain to this standard at the end of the sixth year. But the table shows that the Virginia completion score at the close of the seventh grade is only 15.9, which is identical with the Woody standard for sixth grade, 16.0. In the best graded rural schools, it is 16.1, while the figure for rural colored pupils, if available, would probably be some less.

Reasoning Ability

Comparisons between white and colored school children in reasoning ability, as measured by the arithmetic problems of General Intelligence Examination Delta 2, are shown in Table 8. The standards are in item one of the table. It is apparent that both white and colored groups fail to attain the standard, but that white children do better than colored children in all types of schools. This superiority, however, is not the same in all cases. Inspection shows that the difference between white and colored reasoning ability correlates positively with four types of schools in the order given in the

table. This difference is greatest in city schools and about half as large in two-teacher schools.

In general, then, it is found here, as in the case of native pupils in the Natal system, that white school children are superior in the less complex drill operations of arithmetic. And when success in working simple arithmetical problems is taken as an index of reasoning ability, the colored pupils are found to be deficient in achievement there also.

TABLE 9

Median grade scores for white and for colored pupils in four types of Virginia schools and for 9,398 pupils in 34 Wisconsin city systems in silent reading as measured by means of the Thorndike Scale Alpha 2.

Groups	Grades					
	3	*4*	*5*	*6*	*7*	*8*
Thorndike standards	4.7	5.2	5.7	6.5	7.0	7.5
186 white pupils in one-teacher schools	3.9	4.3	5.4	6.3	—	—
245 *colored* pupils in one-teacher rural schools	*3.2*	*4.6*	*4.9*	*6.1*	*6.0*	—
2,259 white pupils in four-teacher non-city schools	4.4	4.9	5.6	6.4	6.9	—
319 *colored* pupils in four-teacher rural schools	*4.5*	*5.7*	*5.9*	*6.4*	*6.7*	—
3,038 white pupils in city schools, second half year	4.9	5.2	5.8	7.2	7.4	—
1,029 *colored* pupils in city schools, second half year	*3.8*	*5.0*	*5.4*	*6.6*	*7.2*	—
333 *colored* pupils in the Whittier School, Hampton	—	*5.1*	*5.4*	*6.2*	*6.8*	*6.9*
34 Wisconsin cities	5.1	5.4	5.9	6.8	7.0	7.3

TABLE 10

Hillegas composition achievement of 887 first-year high-school Virginia pupils compared with similar groups in other schools, scores arranged in the order of their value.

Groups	*Scores*
Woodmere, New York[1]	6.97
Mobile City, whites[2]	6.69
Trabue's tentative standard[2]	6.00
Janesville, Wisconsin[3]	5.99
Saint Paul, Minnesota[4]	5.83
Cold Springs, New York[1]	5.72
Friends' School, Brooklyn[5]	5.68
Mobile County, Alabama, rural[2]	5.56

[1]From unpublished reports by the Department of Educational Administration, Teachers College.

[2]From M. R. Trabue, "Supplementing the Hillegas Scale," Teachers College *Record*, January, 1917.

[3]From Janesville, Wisconsin, Survey, State Board of Education, Madison.

[4]From Saint Paul Survey, Saint Paul, Minnesota, Board of Education.

[5]From unpublished Survey of Friends' School, Brooklyn, 1919, made by N. L. Englehardt and others, Teachers College.

Idaho Springs, Colorado[6]	5.55
Virginia white girls	5.54
Virginia white boys	5.42
Virginia	5.40
Xenia, Ohio[7]	5.20
Middletown, New Jersey[8]	5.20
South River, New Jersey[2]	5.18
Mount Holly, New Jersey[9]	5.08
VIRGINIA COLORED GIRLS	*5.05*
Nassau County, New York[2]	5.00
Fifty-four high schools (2)	4.99
VIRGINIA COLORED BOYS	*4.88*

SILENT READING

In silent reading, the Thorndike Scale Alpha 2 was used in grades three to seven and in grades four to eight in the Whittier School at Hampton Institute. Table 9 gives the results in white and colored one-teacher, four-teacher, and city schools and with a large group of northern school pupils. The achievement of all Virginia children of both races in silent reading is found to be below the Thorndike standard and below that of 10,000 children in Wisconsin city-school systems. An examination of race differences for Virginia shows that white children have higher scores than colored children in all types of schools except in four-teacher rural schools, where the scores are practically the same for both races. The scores of 300 colored pupils in the Whittier School are nearest like those of 1000 colored pupils in Virginia city schools. When maximum scores are examined, it is found that the achievement of Wisconsin pupils in the eighth grade is equaled by both white and colored pupils in Virginia city systems, but that pupils in one-teacher and four-teacher rural schools in Virginia do not reach this final level although white pupils in one-teacher schools make a median score in grade six higher than that of colored pupils in one-teacher schools in grade seven. The average maximum score of white pupils is 7.1 and of colored pupils 6.7.

On the whole, these completion scores seem to show that Virginia children read about as well at the close of their elementary course as do northern children and that scores for upper grades compare very favorably with Thorndike standards. But in the earlier grades so favorable a statement cannot be made, as the fourth-grade level here is equal only to the Wisconsin third-grade level, and in all comparisons

[6]From an unpublished report of Superintendent C. E. Green, Idaho Springs, Colorado.
[7]From Xenia, Ohio, Survey.
[8]From Middletown, New Jersey, Survey.
[9]From Mount Holly Survey, Board of Education, Mount Holly, New Jersey.

their accentuation because of discrepancies in age must be held in mind. For example, to the last statement must be added the fact that Virginia fourth-grade pupils are eleven years old while Wisconsin third-grade children are but nine.

English Composition

English-composition ability was checked on the Nassau supplement of the Hillegas composition scale. Compositions from 887 first-year high-school pupils in twenty-five secondary schools in twelve Virginia counties were used. Two of these were colored high schools. Table 10 places the median

TABLE 11

Spelling scores, in terms of per cent of total number of words spelled correctly, in white and colored rural and city schools of Virginia and of 202 colored pupils in the Whittier School compared with standard scores in 84 city systems.

Groups	Grades							
	3	*4*	*5*	*6*	*7*	*8*	*Mean*	*Rank*
Rural white, one room	61.9	54.1	56.8	54.6	52.6	—	56.0	5
Rural *colored*	*61.5*	*58.2*	*50.4*	*53.9*	—	—	*55.8*	6
Rural white, four room	71.8	68.1	61.5	62.6	58.7	—	64.9	2
City white, first half	57.8	67.0	63.5	57.3	58.6	—	60.8	4
City white, second half	69.6	63.8	68.3	69.5	63.1	—	66.8	1
City *colored*, second half	*62.4*	*56.2*	*63.5*	*59.5*	*62.9*	—	*60.9*	3
Whittier School, *colored*	—	*53.4*	*50.4*	*56.3*	*58.0*	*48.6*	*53.3*	7
Standard first half	66.6	66.6	66.6	66.6	66.6	66.6	66.6	—

TABLE 12

Median quality of handwriting, scored with the Starch scale for white and for colored school children in Virginia and in various types of schools, compared with accepted standards.

Schools	Virginia Grades									
	3		4		5		6		7	
	W	C	W	C	W	C	W	C	W	C
One room	8.8	*8.7*	9.4	*9.0*	10.0	*9.6*	9.9	*10.1*	10.4	*10.5*
Two room	9.0	*8.5*	9.8	*9.0*	10.1	*9.1*	10.6	*9.9*	11.3	*10.0*
Three room	8.8	*8.7*	9.5	*9.8*	9.8	*9.8*	10.9	*10.2*	11.2	*11.0*
Four room and over	9.3	*9.0*	9.5	*9.6*	10.0	*9.7*	10.5	*9.9*	11.0	*10.1*
Non-city average	*9.2*	*8.7*	9.6	*9.3*	10.0	*9.5*	10.5	*9.9*	11.0	*10.1*
City, first half year	9.8	*9.6*	9.5	*10.2*	9.9	*10.6*	10.4	*11.0*	10.6	*12.5*
City, second half year	9.5	*9.6*	9.4	*10.3*	10.2	*11.2*	10.4	*10.8*	11.5	*12.3*

	Standard Grades					
	3	*4*	*5*	*6*	*7*	*8*
Freeman standards	10.5	10.9	11.5	11.9	12.5	12.9
Starch standards	9.7	10.3	10.9	11.4	12.0	12.5
Saint Louis standards	9.5	9.9	11.2	12.1	12.9	13.8

achievement of both white and colored Virginia high-school pupils among fifteen other medians from sources principally in

the north. In the list of twenty records of achievement in composition, Virginia white boys and girls are seen to have the median ranking. But, when the levels for Virginia colored children are sought, they are found at rank seventeen for colored girls and at the bottom of the list (rank 20) for colored boys. It is noted that the median for all Virginia scores comes just below that for Virginia white pupils. But, while the score for Virginia colored high-school pupils is much below Trabue's tentative standard (6.00), yet it is equivalent to that made in fifty-four high schools in over thirty-five states (4.99). When Trabue's standard medians for all school grades are examined, it is found that Virginia white pupils reach almost the eighth-grade figure (5.5), that Virginia colored girls are at the seventh-grade level (5.0), and that Virginia colored boys are about midway between sixth and seventh grades (4.5 and 5.0).

Spelling

Spelling achievement in Virginia was determined by the use of twenty words from the Ayres scale arranged in overlapping lists of ten for grades three to seven inclusive. Table 11 gives results for typical Virginia white and colored groups, and the standard score, which is 66.6 per cent for each grade examined. The column of averages at the right gives a good idea of the relative rank of the eight items of the table. White groups in Virginia hold ranks 1, 2, 4, and 5; and colored groups have ranks 3, 6, and 7. The Virginia scores for the second semester are equivalent to the standard scores for the first half year. City colored pupils come nearest to the standard score, and the Whittier School group is lower than the rural Virginia colored average.

Handwriting

The handwriting material in the Virginia survey was obtained by the repeated writing of a simple memorized sentence for a time limit of two minutes. Rate was scored in terms of letters per minute, and quality by means of the Starch scale. The details for quality only will be given, Table 12. On the whole, it was found that Virginia children write faster than the standard, and if evidence were sought for a correlation between great speed and low quality of handwriting Table 12 would produce it, for all Virignia children measured are found to be below Starch standards in quality. But when race

TABLE 13

Completion achievement scores in five school subjects for the white and the colored races in terms of medians of all scores collected.

Subject	*White*	*Colored*
Silent reading (Thorndike)	7.3	7.0
Arithmetic (Courtis addition)	5.6	3.2
Arithmetic (Courtis subtraction)	7.3	7.5
Arithmetic (Courtis multiplication)	6.5	4.9
Arithmetic (Courtis division)	7.2	5.8
Arithmetic reasoning (Haggerty)	9.8	8.7
English composition (Hillegas)	5.5	5.0
Spelling (Ayres)	64.9	55.8
Handwriting (Thorndike)	13.0	14.6
Handwriting (Starch)	11.1	10.5

differences are sought, it is discovered that there are practically none in quality of handwriting between white and colored groups. The averages for median quality for the third grade are 9.2 for white children and 8.9 for colored. In the fourth grade, the averages are 9.5 and 9.6 respectively; in the fifth grade, they are 10.0 and 9.9; in the sixth grade, 10.3 and 10.2; and in the seventh grade, 11.0 and 10.9. Although it was found that Virginia colored children write some slower than Virginia white children, the quality of the result is practically the same for both races.

Summary

On the whole, there are found to be distinct differences between the two races considered both as to intellectual ability, as measured by the tests used, and in school achievement. But it is a significant fact that these differences seem to be somewhat greater in intellect than in achievement. It is shown that overlapping in intelligence is to the amount of 15 and 25 per cent of the colored race who reach or exceed the median of the white, but this figure seems to be some larger when achievement in school subjects is checked. In the case of Mayo's study (9), it was reported to be about 29 per cent, and medians of scores collected in this review appear in Table 13.

However, when a reason for differences in overlapping is sought, it is probable that it may be found in part at least in the greater homogeneity of the groups of colored individuals included. This is clear in the case of Mayo's study (9), which was on the basis of white and colored high-school boys in New York City. And it may be that the colored pupils in the elementary schools of Virginia are selected from the upper levels of intelligence to a greater degree than are white pupils

there. The state school survey found them to be "from one to one and a half years older than white children in the same grade" (6, p. 12). Very possibly then, the differences in native capacity found are not actually so great as they seem to be.

BIBLIOGRAPHY

1. Arlitt, Ada H.: "The Relation of Intelligence to Age in Negro Children." *Proc. Amer. Psychol. Assn.*, Dec., 1921.
2. Baldwin, B. T. "The Learning of Delinquent Adolescent Girls as Shown by a Substitution Test," *Jour. Ednl. Psychol.*, 4: 317-322, 1913.
3. Ferguson, G. O. "Mental Status of the American Negro," *Science*, June, 1921.
4. Ferguson, G. O. "The Psychology of the Negro," 1916.
5. Haggerty, M. E. "The Virginia Public Schools," Part II, Educational Tests, 1921.
6. Inglis, A. J. "The Virginia Public Schools," Education Commission's report to the Assembly of Virginia and Survey Staff's report to the Education Commission, 1919.
7. Lacy, W. I. "A Study of One Hundred Retarded Fourth-Grade Pupils Tested by the Binet Scale," *Psychol. Clinic*, 12: 16-24, 1918.
8. Loram, C. T. "The Education of the South African Native," 1916.
9. Mayo, M. U. "The Mental Capacity of the American Negro," *Arch. of Psychol.*, No. 28, 1913.
10. Peterson, J. C. "Comparison of White and Negro Children in Multiple Choice Learning," *Proc. Amer. Psychol. Assn.*, 1921.
11. Phillips, B. A. "The Binet Tests Applied to Colored Children," *Psychol. Clinic*, 8: 190-196, 1914.
12. Pyle, W. H. "The Examination of School Children," 1913.
13. Schwegler and Winn. "A Comparative Study of the Intelligence of White and Colored Children," *Jour. Ednl. Research*, Dec., 1920.
14. Stetson, G. R. "Some Memory Tests of Whites and Blacks," *Psychol. Rev.*, 4: 285-289, 1897.
15. Strong, A. C. "Three Hundred Fifty White and Colored Children Measured by the Binet-Simon Measuring Scale of Intelligence," Ped. Sem., 20: 485-515, 1914.
16. Woodworth, R. S. "Racial Differences in Mental Traits," *Science*, 31: 171-186, 1910.
17. Yerkes, R. M. (ed.) "Psychological Examining in the United States Army," *Memoirs Nat. Acad. Sciences*, Vol. XV, Part III, 1921.

THE SCHOOL AND THE PRESS IN FRENCH CANADA

By Robert C. Dexter

From the lowest grade of the elementary school to the chair of the University, education in French Canada is controlled and supervised by the Church. The aims of the clergy are twofold: first, to preserve the race and the religion of their people pure and undefiled; second, to maintain an attitude of distrust of the State and State controlled education.[1] These aims are being carried over into the United States, where the parochial school is everywhere heralded as the saviour of the race and its protector against that "godless materialistic state-controlled institution, the public school."[2]

In Quebec, the clergy have been uniformly successful in this policy. There are no public schools, strictly speaking, in the province. The schools are either Protestant or Catholic. The former, equally with the latter, are under religious control, and religious dogma is part of the instruction. The school board in Montreal, for instance, consists of three laymen and three clergymen. As the lay members concern themselves chiefly with the financial and physical policies, such as expenditure, new buildings, etc., the entire direction of the teaching is left in the hands of the clergy. The teachers in the Catholic schools, while not uniformly members of religious orders, are frequently members of fraternities or sisterhoods, who serve in most cases without pay, and equally without diplomas. Where there are lay teachers they are generally underpaid and under the control of the clergy.[3]

Although conditions have improved somewhat from what they were a century ago, it is interesting to note Arthur Buller's statement in his special report to Lord Durham on the schools that "the masters were illiterate and needy and the supervisors careless and dishonest: the school houses were unfit for habitation and ill supplied with fuel: the parents are indifferent."[4] Also his statement that the proportion of children attending school in Lower Canada was one in twelve,

[1]André Siegfried: "The Race Question in Canada," p. 63.

[2]Felix Gatineau: "Histoire de Franco-Americans de Southbridge." Framingham, Mass., 1920, p. 44.

[3]Siegfried: *op. cit.*, p. 66-73.

[4]Lord Durham's Report: Lucas, Vol. III, p. 266.

while in New York State at that time it was one in four.[5] Even today such supervision from provincial authorities as exists comes through a superintendent of education, a petty official under the control of the Council of Education dominated by the bishops of the province.[6]

In 1899 a Liberal ministry tried to place all education under a responsible Minister of Education, a member of the provincial cabinet, but a cablegram from Rome to the provincial premier terminated the project.[7] The schools both rural and urban are overcrowded. In Montreal, it was necessary a few years ago, and it is probably still necessary, to secure seats in the schools during the preceding spring. Otherwise the child was unable to attend school, despite a compulsory education law which obviously cannot be enforced. The support for these sectarian schools is collected by the state as taxes.[8] Catholics pay in the Catholic panel and Protestants in the Protestant, but corporations, which presumably have no soul, are classified in the neutral panel and three-quarters of their school taxes must go to the Catholic schools and the balance to the Protestant, no matter what the religious or racial make-up of their stockholders or directors.

The teaching is what might be expected. Catechism and religious instruction bulk large in the curriculum, and the history and literature are studied in such a way as to redound to the glory of pre-revolutionary France and the Catholic Church. Memorizing is largely practised and modern methods of pedagogy are almost, if not quite, unknown.[9] The resulting illiteracy is very high. The percentage of illiteracy in the province of Quebec, even with inadequate statistics, was 12.66 in 1911,[10] much greater than that of any other of the older Canadian provinces and about twice that of Ontario. In an experience of four years dealing with French-Canadian relief cases—grantedly an inferior group—in Montreal it was the exception to find an individual who could read and write more than his own name, and often that with difficulty. The contrast with English Canadians of the same class was marked in this regard. The results are also evident in the illiteracy figures of the New England cities in which French-Canadians form a large part of the population.

Secondary education is even more frankly in the control of

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[5] *Ibid.*: p. 253.
[6] Siegfried: *op. cit.*, p. 66.
[7] *Ibid.*: p. 69.
[8] *Ibid.*: p. 61-8.
[9] *Ibid.*: p. 72-3.
[10] Article, "Canada": New International Ency.

the Church. The State makes no effort to provide it, except through subventions to the religious orders carrying on the so-called colleges—comparable to our Junior and Senior High Schools—and convents.[11] In 1903 in these clerical institutions there were but 32 lay masters as compared with 527 clerical or monastic.[12] What higher education exists for girls is entirely in the convents, where the instructors are all members of religious orders. It is not difficult to surmise the place which modern science, natural and social alike, has in such institutions. The entire atmosphere is medieval.

Even more sectarian, if that is possible, is higher education represented by Laval University in Montreal and Quebec, and the various seminaries associated therewith for the training of the priesthood. The students are definitely trained in a system of philosophy distinctively scholastic.[13] The aim of the university is not to produce men, but to produce Catholic men, Catholic doctors, Catholic lawyers, Catholic men of business.[14] The universities exist, not primarily to give educational training, but for assuring the greater glory of God. An indication of their attitude which will sound strange to American students is found in the Bulletin of Laval, 1904-5, which states: "the students having at their disposal in the university library the books they require, must not subscribe to any other. They must not frequent the reading rooms of the town, in which they would be tempted to waste their time and neglect their studies."[15] Well may Siegfried, himself a professor of L'Ecole Libre des Sciences Politiques at Paris, conclude his study of the higher education in Quebec with the statement that "the university in Canada (Quebec) instead of being the center for new ideas and the evolution of the future, is a potent instrument of conservatism. There is something venerable and poetic about Laval, which is invested with a charm for the French visitor, but—for signs of progress we must look elsewhere."[16] The influences which such institutions exert on emigrants to New England cannot be overestimated, as it is in such institutions of higher learning that the French priesthood, with rare exceptions, receives its training, whether Canadian or American born. A large number of French-Canadian doctors and lawyers practising in the United States also receive their training at Laval.

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[11]Siegfried: *op. cit.*, p. 89.
[12]*Ibid.:* p. 84.
[13]Siegfried: *op. cit.*, p. 95.
[14]*Ibid.:* p. 95.
[15]*Ibid.:* Quotation from "Annuaire de l'université Laval—1904-5."
[16]Siegfried: *op. cit.*, p. 95-6.

Liberty of the press is guaranteed by the Dominion of Canada in common with all other parts of the British Empire. But in this case as in others the Church exercises its openly avowed belief that "The Church is independent of the Commonwealth—she stands above it. . . . It is not the Church that is comprised in the State; it is the State that is comprised in the Church."[17] Hence the Church exercises a most drastic control of the press and the reading of the French-Canadian people. So far as books are concerned it maintains an "Index" of its own, which sifts all current French and English literature, excluding that portion to which it objects from the bookshops maintained by the French and from libraries and reading rooms under its control.[18] Musset, Renan, and Zola, "whose name should not be so much as mentioned even from the pulpit,"[19] are all barred and some of the ultramontanes even go so far as to fulminate against the *Revue des deux Mondes*. Public libraries and reading rooms are a rarity in the province. Here and there is a collection of religious books under the control of some monastic order, but the typical public library of the American city is nowhere found. Even Montreal, a city of half a million inhabitants and one third Protestant, has no public library because the hierarchy would not sanction the appropriation of the necessary funds unless they had absolute supervision, and they controlled the votes in the City Council. As a matter of fact, Carnegie some years ago offered to give the city a building on the same terms as the gifts to any American cities but his offer was refused.

With the daily or weekly press the control is even more definite. There was no printing press in Canada prior to the British conquest,[20] and while several flourishing journals now emanate from the principal centers of the province they are entirely under the control of the clergy. "Sometimes a canon of the cathedral in Montreal specially selected for the purpose reads the proof of articles and deletes whatever may seem to him harmful."[21] But even without such supervision there is really no danger. Any statement calculated to affect the Church results in the editor's having an interview with the archbishop: a second offense would result in a statement from the altar that the faithful must not read or advertise in the

[17]Collective pastoral letter of the Quebec Episcopate, Sept. 22, 1875—quoted by Siegfried: *op. cit.*, p. 35.

[18]Siegfried: *op. cit.*, p. 28.

[19]Letter from Mgr. Bruchesi, Archbishop of Montreal, 1903, cited by M. G. Gibney, *L'European*, Oct. 31, 1903—Siegfried: *op. cit.*, p. 28.

[20]Douglass: "New England and New France," p. 388.

[21]Siegfried: *op. cit.*, p. 39.

offending journal, and that would spell bankruptcy.[22] These statements are not theoretical. *Le Pays* twice attempted it and was finally put out of business by Bishop Bourget. Another group, more recently in 1903, attempted to give currency to liberal ideas in *Les Debats* and *Le Combat.* It set forth doctrines regarding evolution which the present Archbishop of Montreal stated "bordered on heresy." The Archbishop interdicted all good Catholics from "buying, selling, reading or keeping this newspaper," and it ceased to be printed.[23] The interesting point here is that in Canada, as in the United States, freedom of the press is provided for in the constitution, and yet for a large group of the population the much-boasted freedom of the press is mythical. Much the same situation exists with regard to the French press of the United States, which is the intellectual pabulum for a large part of the French-Canadian reading public.

[22] *Ibid.*
[23] *Ibid.*: p. 40.

EDWARD MUSSEY HARTWELL

By G. Stanley Hall

I first met Dr. Edward Mussey Hartwell at the Johns Hopkins University in the early eighties, where he held a unique position as professor of Physical Training. He was selected for this position, not primarily as an excellent athlete but because he was expected to take the subject in a large way into the classroom and give it a dignity such as it had never had before, of being a culture-subject with lectures, examinations, etc. For this he was fitted at the start, and by his rare diligence and enthusiasm he soon made himself by far the most competent and broadly-cultivated teacher of this subject in the country. No one knew so well as he the history of physical training from that practised by the ancient Greeks down to the great *Turner* movement, which originated in Germany, as well as the Swedish system, and the theories and developments in the important departures in all lands down to the present time. His authority as a physician gave him influence with the students, who were required to develop their bodies in the little but admirably organized gymnasium under his control; his training in his profession also greatly broadened his interests. This was well illustrated by his masterly history of the Anatomy Acts, which gave such a graphic description of the century-long difficulty in securing cadavers for dissection; and he was able to draw important comparisons between this difficulty and that which Physiology has experienced ever since, and still does, in making free but well-controlled use of vivisection, on which it is just as dependent as Anatomy has always been upon dissections.

He was the author of a voluminous treatise on the History of Athletics and Physical Culture in its various aspects in different ages and countries, going with characteristic thoroughness wherever he could to the original sources, spending much time and even money to get at them when necessary, even scouring Europe for the purpose. This work, a mine of information used by every writer since upon the subject, is still the standard and has not yet been superseded. The history of plays and games was included in his field of interest, as was the body-training of children of all ages, adults, and even aging people, to which Ziller has given such an impulse. One of his ideals was to have a complete set of the Zander apparatus, expensive and elaborate though it was, for medical cases. All his work was developed more or less synchronously with the Sargent system at Harvard, in which he took a deep interest, and I always felt that these two men both stimulated and supplemented each other, Sargent having ample material equipment and specializing more, while the broader side of the subject in general made a stronger appeal to Hartwell.

One year at the Johns Hopkins, Hartwell and I carried out together work which involved a great deal of labor and the result of which was published in a joint paper on Bilateral Asymmetry in bodily form and function. That he gave himself for a time with such abandon to a somewhat special work of this kind was highly characteristic.

After leaving the Johns Hopkins in 1889, when I was touring Europe preliminary to organizing Clark University, we met very unexpectedly in St. Petersburg, where we visited many Russian institutions, schools, universities, particularly the infantry and cavalry schools for young officers, even calling on the great Russian premier, Pobedonostsev, and

various eminent Russian priests. We found, too, that our interests and even our ways for a time in Germany coincided.

Thereafter I saw him not infrequently but irregularly, having various visits from him in Worcester and often finding that he and I were on the same programs at various educational meetings. Of his work in Boston I have little personal knowledge but only know that it was highly successful and that he was a most valuable asset to the efficiency of both the school and later the municipal system there, where he was highly respected and influential. I have read with very great interest the admirable and detailed account of his activities by Dr. Leonard, and the brief appreciation of his life and work by his old friend, Professor Tyler of Amherst, in the Amherst *Quarterly*.

In my own educational teaching I owe very much to Dr. Hartwell, having incorporated in my lectures the methods and results of about all he ever wrote down to the Boston period. I have always held him up to my students who have specialized in Physical Culture as the broadest and most scholarly man this country has as yet produced in this field. A few of them whom it would hardly be proper to name here have found his conceptions of the scope of this department very normative for their own theory and practice. I have always felt, however, that, partly owing to his modesty, the real importance of his contributions has never had adequate recognition. He was a little too far ahead of his time and this is always most fatal to adequate appreciation. But I firmly believe that this will come. In various interviews, letters, etc., I have been struck by the fact that he more than any one I ever knew in his department was keenly interested in everything shown by both abnormal and normal psychology to have a bearing on physical or mental hygiene, in which latter subject, I think, his interests grew and widened throughout his life.

Personally, Dr. Hartwell was one of the most genial and companionable of men, the most cordial and loyal of friends; generous in his expressions of approval of what any one did that appealed to him. Over and over again I was surprised to realize how vital was his touch with the kind of psychology I taught, and how he had himself developed definite attitudes to themes marginal to him, like psychoanalysis, the conditioned reflex, etc. We often heard each other's lectures at the Johns Hopkins. Thus he not only ideally illustrated the old saw of a sane mind in a sane body but united, as no one I ever knew did, ability and devotion to body-keeping and to scholarship and intellectual culture. As he grew older, what I would call his humanism or his zest for life, domestic and civic as well as cultural, grew and his sympathies with men, things, and movements widened. He seemed to me to have about all the fundamental qualities that make for not only full and complete living but for genuine service to the race. His great handicap always seemed to me his modesty. Wide as is the circle of his friends and deep as is the appreciation of all who knew him, both his example and his work would have been more immediately influential if he had had more aggressiveness in securing the ample financial backing that he needed. A little more consciousness of his own superiority and a little less aversion to the "spotlights" would have helped him. Although full recognition has been retarded, I am confident that he will not be forgotten but that, on the contrary, in proportion as the causes to which he devoted so much zeal and attention attain the influence they deserve, his fame will increase and spread.

The following collaboration by Dr. Hartwell's intimates sheds an interesting new light upon his character and work.

Boyhood tramps awakened observation of Nature, stimulated later by Hitchcock's inspiring instruction in geology at Amherst. Her ideals,

and the principle of adaptation of study to personality and practical careers, her Physical Education point of view with the scientific, rapidly absorbed his powers. With him went familiar friends of the same background and ambitions. His Amherst education was of enduring influence throughout his life. The long service as commodore of the college navy; freedom for exploring the lovely country; friendships, genial and enlivening, made the years spent there a firm foundation for any career. He and his classmates made a brave start in life, which rapidly called his special gifts into action, and his nature developed harmoniously in keeping. Three years of teaching followed in which he was able to introduce into the Latin public school of Boston the instruction received at Amherst for physical exercise.

His course in medicine, supported on a salary from his uncle, Dr. Mussey, in Cincinnati (Miami College), was interrupted by his decision to pursue science at the Johns Hopkins University in Baltimore then recently opened. To be a "poor scholar" had attractions greater than the chances of medical practice. The mid-Victorian period to which Hartwell belonged was a rare time for research, bringing to the university in Baltimore: Huxley; Sir William Thompson, Lord Raleigh, Adams, Sylvester, Haupt, Lyman Hall, Talcott Williams, Woodrow Wilson, Lanman, Gildersleeve, Sidney Lanier, Childs, Allinson, Rowland, Archdeacon Farrar. Archaeology, astronomy, anthropology, physics, the classics, in association with foreign schools of thought, were made familiar to all. These men set forth the fairy tales of science with freshness of discovery.

Most of the Amherst group figured in "Who's Who" for character and attainment, depending on personal effort and Fellowships for their maintenance. They were enthusiastically led by President Gilman and they found a fruitful field in the friendly city of their sojourn. Hartwell's research was in biology, which gave him his fellowship; medical and college gymnastics also absorbed much of his attention. The easy relation of student and city people was admirable every way to both. As an introduction to the main work of life, the town and its open-minded citizens were a cheerful atmosphere for the young newcomers from everywhere. The University leaders mingled well with local institutions, youth, and society; genial family life opened to a social young fellow like Hartwell home-like associations.

The companionships so begun were congenial and well worth while. Brune, McHenry, Nicodemus, Carey, Brackett, Morison, McLean, N. Gilman, and Randall, are names of some that brought intimacies of real value and enduring quality into that chapter of student life. The group of agreeable men and women who met for his afternoon teas at the gymnasium were glad of the meetings, and were his close friends always thereafter. The University Sanhedrin was a smoke-talk of the best quality. He was one of the organizers of the University Club in the city.

Between the Johns Hopkins years and the call to Boston came three commissions for European research, on Physical Education, Baths, Playgrounds, etc., from the Department of Labor and Education in Washington, Commissioner Harris being a valued friend. These carried Hartwell into untrodden ways and into all the capitals, libraries, bureaus, and embassies, which readily received him and from which experience he gained varied advantages, personal and professional.

Travel one summer into the Kentucky mountains with fellow geologists brought rare experience of the mountain beauty and interesting native people.

Any who had the privilege in following years of accompanying him on longer journeys abroad, into the Norse towns, German and Russian, to the cathedral towns of England, and the Swiss lake region, found him an

eager, observant traveler and had a share in his ardent enthusiasm for the details of each experience—the color-blending of the moors of Devonshire with the rocky coast and blue of Bristol bay, understanding of our own ancient shore-formations, the charm of forest and hill, etc. A significant name given by his early acquaintances, the "Viking," was suggested by his Norse appearance. When studying later in Scandinavia and Germany he frequently had to assure those he met that he was an American, not one of them.

The call to supervise school hygiene and gymnastics in Boston brought a welcome, with helpful furtherance from Mrs. Hemenway, Shattuck, Bowditch, Ernst, Noyes, Dole, Sargent, Stanley Hall, Talcott Williams, Leonard, Dora Williams, John Tyler, Samuel Hartwell, Brackett, Lovett, Geoffrey Brackett, Bliss, Bradford, Sedgwick, Mrs. Wheeler, Thayer, Morison, all interested in some one or other side of bodily development. A Zander Institute for Swedish health and exercise education was planned, with Hartwell at the head, but the time was not ripe for such a venture. Financial backing and the impetus to secure it were not sufficient. A strong body of believers in hygiene and bodily exercise were with him and his fellow scientists. Professors and the Boston community gave the Swedish teachers and their methods full support, but in general the happy moment had not arrived. These men were ahead in experience and knowledge. Thus a man so modest as Dr. Hartwell, accustomed to opposition and independent thought, found waiting for opportunity long and uncertain. So, reluctantly and after serious consultation, Hartwell left his comrades and new supporters in the vanguard of the field, accepting a change of profession to the Secretaryship of Statistics in City Hall, to the permanent loss of physical education and disheartenment of its pushers. They all had their careers started, Leonard's on just the same lines and Sargent, and were thus more or less theoretically interested in the work here. To Hartwell, it became a choice of making his living in this advance or accepting another call. The Bureau of Municipal Statistics was the outcome of Mayor Quincy's interest in establishing here such a department after conferring with Hartwell and others. He was the first and only secretary for many years.

The opportunity was agreeable in outlook and soon opened correspondence with foreign offices. The active workers were fully instructed. They had for their object good housekeeping and bookkeeping; human betterment; accurate reports compared with those of other cities; to know all there was to know and publish regularly their results; movements of population, facts showing every trend of thought, in figures as far as possible; details of historical developments in city and town; local resources in commerce; practical benefits possible for all departments and citizens. Their position and equipment were never favorable or attractive. Their publications, though read extensively by all sorts of people, and their reports in daily papers were appreciated only by the few. "Hartwell could make even Statistics interesting" because he had sympathy and vivid power of presenting a subject; love of progress and belief in goodness and truth; because he could remember more effectively and see farther ahead than most men. Love of science and genius for detail were enduring qualities with which in a good spirit, within and without, to face the misrepresentations of politicians who understood so little, the periodical Aldermanic attacks. Some of the newspapers, notably the *Globe*, were always ready to publish anything written by him. Many of the mayors were warm friends personally and intelligently, noticeably Mayor Curley. They carried through many permanent improvements. He had the support of scientific educational authorities in this country and Europe, and so he weathered every storm, with the reward of a great accomplish-

ment. The best publication of the department was the small monthly pamphlet, still distributed every month without charge to all sorts of people who wish Boston statistics. The present secretary and his able staff are satisfied that this is their strong proof of indispensable usefulness. Dr. Hartwell's best years, after youth, were spent, thus, in a city's service on a scarcely living wage, with no retiring age-limit with pension in sight. Vacations were voluntarily given up because of short-handed assistance. This is a record to be made clear to the attention of the authorities and for the benefit of others, who may be led to "serve so long for love of humanity, so little for reward." *Amor vincit omnia.*

A useful hobby of this period was research into the history of weights and measures of all times; devising patentable practical articles relating to mailing convenience; exhaustive writings on geographical and literary derivations; the development of the city Common, so that when any legislation arose on this matter he was appealed to for the facts controlling it. This was attractively illustrated by him in a lantern-slide descriptive talk.

Connection with the Archaeological, Statistical and Medical library societies, also the Physical Education Association, afforded him congenial relations. Good luck and ready hospitality brought many scholars and "good fellows" about him. He found in the Puddingstone and Eliot Clubs men of rare attractions. The Charlesbank Home trustees meetings were always happy occasions. They looked to him as their chief inspirer. The Commission for the Blind was one of his constructive and beneficent labors, doing perhaps better and more original work than could be found elsewhere. "To strive mightily, yet eat and drink as friends," was their genial habit, the clever, kindly men who carried these things through. "Boston and its Story," written in vacations and evenings, published by the Department and yet unpaid for, is in wide circulation as a text-book for local history in schools. Its having been allowed to run out of print (leaving no means of restoring type, though the book is still demanded in large numbers) is one evidence of the value of liberal, accurate methods in a city printing-office, and the loss entailed by contrary ways.

To find an ancestor, Sir Broderick Hartwell, heir to Hartwell House, mentioned in the "Domesday Book," led to visiting that estate, of immemorial elms, in Bucks, England; to study and writings on early towns, villages, county institutions; derivations of names. His subjects were varied and furnished him with a recreative pursuit for his leisure hours. The observations of the heavens were an unfailing delight; to browse happily in books of every kind, his sure diversion. Humor was as keen as tender apprehension of beauty. Mark Twain, Mrs. Ewing's tales, Trollope, modern novels, poetry, biography, short stories, and the best music he could command were always his solace.

To be called familiarly, from college days right through, "Mussey" on all occasions meant this among other things, that his grandfather, Dr. Mussey of surgical fame, derived his name from Musset, a small town in southern France associated with the poet.

The war affected him deeply. To be disappointed in the accepted ideals of historic Germany, trusted for scientific truth as well as musical and poetic masterpieces, was a personal grief, as to many others. He dwelt on the *people's* having no responsibility, that it was a war of *rulers*, convinced that principles would prevail at last, and institutions survive. It was good to read hope in the signs of the times; to rejoice in" our boys' " part in it. Armistice Day and the symbolism of the "unknown soldier" appealed to him, so that he climbed the hill to church, with effort, to meditate and give thanks for his own blessings.

The heart and head wrought with new vigor and insight in later years.

New pursuits were taken up, old and new friendships strengthened, enjoyments of life enriched, music giving, in addition to pleasure, understanding of song and orchestra, as appeared in his conversation. To have good company at home repaid him for losing it outside, and the constancy of early ties blended with new relations. The old jest and new discovery were alike refreshing. No friend was ever lost or forgotten; life had its great rewards.

To do justice to his classmate, Woodrow Wilson, refusing to accept the propaganda; seeing the value of his Fourteen Points; rejoicing in his sense of international responsibility; in his popularity among the *peoples* everywhere; confiding in a League of Nations; speaking in season the word of loyalty—all were characteristic of Hartwell's courage and historical insight. He was true to the idea that the laurel should be put upon the brow, not laid on the tomb; that history, at last, takes time and "reports the man and his cause aright," to which result his contemporaries must bear unprejudiced witness.

One of Hartwell's favorite subjects was the distinction between Puritan and Pilgrim; then, the whole Separatist movement, important influence in our own time. He had in mind to write fully some of his own ideas on their characters. He contrasted and compared the Separatist ideals with the Hebrew "going out to seek a country." The poetry of the Psalms was a beloved theme; he liked to dwell on Hebrew literature. The numbering of the people in Bible times in Palestine—leading to natural revolt—was often referred to by him as parallel with the Domesday book taxation scheme. Similar events, with like results in many lands, down to our own time, may be observed by the careful reader. A parallel with the study of the Jewish writings was to him the music and rhyme of the negro, the outcome of bondage and wrong wrung from an alien people, who uttered in all their spirituals and folk-songs no word of vindictiveness —only appeals of faith and devotion to their Heavenly Deliverer. These things were his own thought, the subject of pen, and frequent Bible reference. He liked to talk about them with his companions.

Given leave of absence from the office, he had the gratification of dictating at home, by request from his Department, important chapters in the history of the last fifty years in Boston, his memory and descriptive gift making it real and picturesque. There was abundant material in his manuscripts for his own private writings if the time had been granted. To turn to the Apocrypha, the early Moralists, biography, was his continual refreshment. His courage in and acceptance of his weakness and failing bodily powers, mind all alight, were sublime.

BOOK REVIEWS

Elements of Human Psychology. By HOWARD C. WARREN. N. Y., Houghton Mifflin Co., 1922, 416 p.

The "Elements of Human Psychology" by Professor Warren of Princeton, although published as a new book, is essentially a rewriting of "Human Psychology" for more elementary use. Some new material has been added, with considerable rearrangement and an advantageous simplification in style and treatment. The text is illustrated with 80 admirable figures. With the index will be found a glossary of definitions of the principal psychological terms, a much needed feature. There are, unfortunately, too frequent references to discussions of the same subject elsewhere in the book, interrupting the reader's thread of interest. Possibly the writer has desired to sacrifice interest for thoroughness. However, as a text-book for classroom use the "Elements" is an improvement over the earlier book from many standpoints. Compared with other general text-books it may be classed among the best half dozen in use today.

A brief survey of the field is given, after which the approach to the study of psychology is made through a thorough-going neuro-functional discussion, which is in accord with the writer's aim to write a "psychology based on the functions of the nervous system." There follows a detailed presentation of the senses, the eleven major senses (sight, hearing, smell, taste, touch, warmth, cold, organic, pain, kinaesthetic, static) being grouped under three categories based upon three different sorts of activity —external, systemic, and motor.

Three processes are outlined for psychology to study: (1) stimulation (or reception), (2) adjustment (or integration), and (3) response (or action). The sense organs are stimulated and the sensory nerves conduct the resulting nerve impulse to a center. Separate elementary sensations are put together so as to make actual conscious experience. This is the second stage in the mental process, which is discussed in the chapters entitled *Conscious Life, Perception, Memory and Imagination,* and *Feeling and Emotion.* "Sensations would be detached . . . if the sensory impulses . . . were not collected and integrated in the brain centers. . . . Perceptions, memories, emotions, thoughts, and other experiences are . . . integrations; they are due to the orderly combination of the separate sensations, and to various changes which take place in connection with the combining process." (P. 122.)

The third process to be studied by psychology is that of "acting and responding." The chapters entitled *Instinct, Intelligence,* and *Volition* are concerned with these problems of behavior. The highest type of human experience is considered to be language and thought, "which are brought about by a third level of nervous arc and involve four special centers in the brain" (p. 304); and "the final summation of our entire experience life is *personality.*" (P. 380.) These aspects of behavior and other synthetic conclusions are considered in the remaining chapters of the book, entitled *Language and Thought, Mental Succession, Human Character,* and *Personality and Control.*

Experiences and responses are not considered to be detached events. They are a part of a continuous stream resulting from the sensatory excitation flowing through the receptor life as "a succession of perceptions, thoughts, reasoning, dreams, emotions, volitions, and other experiences" into the active life in a "succession of responses." (P. 329.) Every response is an exercise of control and the "three important means of

control are *instinctive* actions, *intelligent* actions, and the special type of intelligence called *rational* actions." (P. 376.) "Control is the most significant feature of behavior" and the "final outcome of this progressive organization of behavior is our *personal control of the whole situation.*" (P. 380.)

The writer has made a distinct contribution to text-book literature in his discussion of intelligence and of character. Intelligence is the ability of the individual to acquire new forms of response. "Intelligent behavior is defined as any complex action which is not inherited, but is acquired by the individual, provided the response be in any way suitable to the situation. Intelligence means the *capacity* of an individual to break away from instinctive behavior and acquire new modes of action." (Pp. 250-251.)

The intellect is a phase of character. "Character arises from the consolidation of attitudes into more permanent trends of life." (P. 345.) "The attitudes which grow out of external experiences enter into our intellectual character . . . ; systemic attitudes build up our *temperament;* motor attitudes regulate our *skill;* social relations build up a fourth phase of character, called *morality.*" (P. 358.) "Personality is the entire mental organization of a human being at any stage in his development." (P. 360.)

In his introductory discussion of the "important divisions" of psychology the list given in the older work has had added to it the branch of "Applied Psychology." It is with interest that we note this indication of acceptance of the practical application of psychology to life as a branch of the science; also we observe the attempt to bridge the psycho-physical chasm and to unify the behavioristic and introspective viewpoints. The importance of the affective factors is recognized and a genetic viewpoint is maintained. A change in opinion from the older book appears in the significance attached to psychoanalysis.

The writer's definition of psychology has undergone a revision since 1919 when "Human Psychology" was published. In the earlier work psychology is "the science which deals with the mutual interrelation between an organism and its environment" (the environment including all external forces and relations which affect the organism, social as well as physical). In the "Elements" the definition of psychology appears as follows:

"Psychology is the science which deals with the facts and events arising out of the interaction between a creature and its environment by means of receptors, nervous system, and effectors. Human psychology is the science which deals with the interaction between man and his environment by means of the nervous system and its terminal organs, together with the mental events which accompany this interplay." (P. 5.)

We are approaching a period in the history of psychology when the text-book must present the whole field of psychological activity in a unified manner with the purpose of giving the elementary student an interested attitude toward the science, stimulating him to further study in one or more of its branches. This text ranks as a development in the attempt at unity; it represents a significant achievement in presenting in an admirable and convincing manner a correlation of the facts and viewpoints prevailing throughout the many disjointed branches of the science.

DOUGLAS FRYER, Clark University.

Experimentelle Untersuchungen über das Gefühlsleben des Kindes im Vergleich mit dem des Erwachsenen.[1] By HELGA ENG, Kristiania. Leipzig, Barth, 1922. 258 p.

The purpose of this research was to study the emotional life of children of school age by means of experimental methods. The plethysmograph was

[1] "Beihefte zur Zeitschrift für Angewandte Psychologie." Herausgegeben von W. Stern und O. Lipmann. Beiheft 30.

used to record the volume and pulse changes that take place in the arm, and the pneumograph to record changes in the respiratory curve during emotional states, the instruments being attached to Marey tambours and simultaneous records written on the kymograph. Although considerable work has been done upon adults by Mosso, Binet and others with the plethysmograph and by Zoneff and Meumann with the pneumograph, no previous experiments have been done with children except for a few isolated instances by Binet.

An idea of the thoroughness of the present study will be gained from the statement that the author gives 111 pages of detailed descriptions of 515 experiments besides 9 graphs showing about 50 curves. Six boys and five girls, ten to twelve years old, served as subjects, besides fourteen University students, seven men and seven women from nineteen to twenty-five years old. Under carefully controlled conditions many mental states were investigated, as attention, mental work, spontaneous feelings of pleasure and displeasure (*Lust* and *Unlust*), fear, and aesthetic emotions. The subjects were stimulated by agreeable and disagreeable tastes and smells, by problems in arithmetic, by pictures, music, etc.

This work is so comprehensive that we can only give a few of the results here. The phenomena accompanying attention were found to be a lessened volume curve, a decreasing pulse height, and a slow pulse and respiration. Displeasure (*Unlust*) was manifested by a lessened volume curve, decreasing pulse height, accelerated pulse, and retarded, deepened and irregular respiration. Displeasure with excitement (*Unlust und Erregung*) were accompanied by a high volume curve and pulse height, an accelerated pulse and either unchanged, accelerated or irregular respiration. Depression, on the other hand, was shown by a low, even volume curve, a very low and weak pulse height, and slow pulse respiration. Fear had two distinct phases, the first accompanied by a rising volume curve, unchanged or increasing pulse height, accelerated pulse, and a momentary cessation of breathing followed by acceleration; the second stage showed a lessened volume curve, decreasing pulse height, and slow pulse and respiration. Pleasure was manifested by a rising volume curve, increasing pulse height, slow pulse and accelerated respiration.

As to differences in the emotional life of children and adults, of men and women, the author found the same reactions to stimuli with all the subjects. In the spontaneous feelings, however, there was a difference. With the children there were fewer *Unlust* curves than with the adults. They were of shorter duration and less intense. They also showed more pleasure curves than the adults and these lasted longer than the feelings of displeasure. Both of these kinds of spontaneous feelings were more often aroused in the children by sense impressions but in the adults depended more on mental states and trains of thought.

Although there were no special differences between the girls and boys, there were some between the men and women in the spontaneous curves. With men there were more curves of displeasure and with the women more of pleasure. Happiness seemed to be aroused more easily in the women than the men and on slighter grounds. The *Unlust* curves tended to manifest themselves somewhat differently in the two sexes; with the women there were more cases of depression, and with the men more of displeasure with excitement (*Unlust und Erregung*). The author reviews the contradictory statements of other writers as to the emotional life of men and women, some of whom (Heymanns, Burt and Moore) state that women react more strongly to emotional stimuli than men while on the other hand Helen Thompson Wooley says the contrary. She repeats that she found no differences in the extent of changes in the pulse volume and the respiratory curve between boys and girls or between men and women.

This research is an admirable piece of careful work and a valuable contribution to our knowledge of physiology and psychology; it can only be appreciated by reading the original.

L. B. NICE and MARGARET M. NICE, University of Oklahoma.

The Practical Application of Psychology. By CLAUDE WM. CHAMBERLAIN. Sioux City, International Society of Applied Psychology, 1922. 225 p.

Approximately one hundred pages used for lecture titles, copyright designations, introductory quotations, suggestions for research, etc., and blank pages. Printed in large type the book contains approximately 25,000 words of original matter.

"It is the author's desire . . . to establish a logical and orderly array of some particular laws governing applied psychology . . . applicable to . . . every day life." Twelve major generalizations are discussed in the fourteen popular lectures, under such titles as: *building your own environment, the mental dynamo, the hidden power of man, exploring the subconscious, the developing of mental energy, will power and concentration, psychology of achievement.*

The material in these lectures is presented in dogmatic fashion, illustrated by mechanical analogies. Conjectures from the field of mental suggestion are freely used in the later lectures as bases for the laws under discussion, some of which appear as of more than dubious authority.

The title to the book has a certain appeal. We have been hoping that someone would offer to the general public more of the benefits of psychological research for use in "everyday life." But this collection of pamphlets and of "pep-talks" has again illustrated the danger of the wholesale application of psychological generalizations. The best results in applied psychology seem to come from the application of detailed knowledge to precisely defined situations.

The author's tone is authoritative: "Get into the work for which you are best fitted or you won't break any records"; "These books are written in the least possible number of words. They need to be read and reread frequently."

The twelve laws are characterized as principles "which are here presented *for the first time* so that the average individual of inquiring mind may understand them." (Italics not in original.) Some of the *laws* are of the Association School parentage or older. The author states it was his "privilege to assist in giving mental examinations to over 50,000 officers and enlisted men in the Army." One fails to find him listed as one of the Army psychological examiners, either enlisted or commissioned personnel.

It is appreciated that this book aims to offer a brief popular inspirational lecture course. It is one of the minor examples of that flood of literature which is being produced in response to the present great popular demand for homeopathic doses of scientific knowledge (with the difference that its dose is unusually light), and is an admirable example of the "pep literature" sponsored by some of the popular magazines, one of many of its kind on an overstocked shelf.

DOUGLAS FRYER, Clark University.

BOOK NOTES

Curriculum Construction. By W. W. Charters. N. Y., Macmillan, 1923. 352 p.

The author thinks that the profound changes which have taken place in science and the world ought to have fundamentally modified the school curriculum but avers that this is not the case, save at least in a very rudimentary way, up to the present. Evolution, biology, sociology, psychology, pragmatism, and all the changes that have taken place since Rousseau have not sufficiently pried us loose from the ideals of the trivium and quadrivium. The purpose of this book is to do this. In his twenty-two chapters it is evident that while at various points he glimpses the vision, he has not produced anything that is very revolutionary, although not a few of his conceptions would be a very distinct advantage if given practical application. In this work one can hardly see the woods for the trees, and a considerable perusal of it leaves one in doubt whether a thorough mastery of it would really give a teacher any coherent and definite new ideal, although he would be better posted in many of the present-day fads. Something more concise and fundamental than anything which appears to lie within this author's ken is needed for the modernization of our curriculum. He has not even referred to almost the only work which does at least realize how radically the curriculum ought to be transformed, *viz.*, Wells's "The Salvaging of Civilization." To deal adequately with this subject a writer must have vision. The present author's field is only contemporary pedagogy in a rather narrow sense.

Intelligence Tests and School Reorganization. By L. M. Terman, V. E. Dickson, A. H. Sutherland, R. H. Franzen, C. R. Tupper, and Grace Fernald. Yonkers, World Book Co., 1923. 111 p.

This, especially Chapter I entitled "Intelligence Tests and School Reorganization," sets forth better than anything that has yet appeared the claims of the testers, who evidently believe that they have already gone far enough and secured results enough to reconstruct the school system. "The usual custom of standardizing educational tests in terms of grade performance has little to commend it." "Age offers a far more satisfactory and permanent basis for norms of school advancement. It is beginning to be recognized that the educational tests will have to be re-standardized in terms of age means or medians." "In general, from 20 to 25% of the pupils of a given grade have attained a mental age about as high as the median mental age of the next higher grade, while the lowest 20 or 25% in the same grade are about as low in mental age as the median for the next grade below." Still it is wrong to say that no overlapping is permissible. The author of this chapter thinks that not more than seventy per cent of our pupils are being given the instruction that is best suited to them. He criticizes the schools for over-rating the older and under-rating the younger pupils. The problem of differences may be met by individualizing instruction or by the formation of more homogeneous classes for group instruction.

Principles of Education. By Chandra Chakraberty. Calcutta, 1922. 112 p.

We have here an exposition by a competent and literary Hindu of what his race and nation regard education to be, the influence of recapitulation, the relation of intelligence to memory; physical, sexual, and female education; and the influence of fatigue. In the second part the conclusions

of the author are applied to various stages of education from elementary to university, with a very significant final chapter on foreign universities.

A Study of American Intelligence. By CARL C. BRIGHAM. Princeton U. Press, 1923. 210 p.

This careful and competent study, well prefaced by Professor Yerkes, presents the sad conclusion that "we must face a possibility of racial admixture that is infinitely worse than that faced in any European country." This is largely on account of the Negro, who now constitutes some ten per cent of our population, but even without him and even were immigration restricted deterioration seems inevitable here. The Alpine and Mediterranean races who have lately so swelled the ranks of our immigrants, while above the Negro are nearer to him than to the Nordic, and further race mixture is inevitable and will be deteriorative. We have no space here for the impressive figures by which the author supports his conclusion and in this volume no attempt is made to justify the method of psychological investigation which has led to these conclusions. They are, however, stated very succinctly and illustrated by abundant curves and tables. It is, as is well said, a book not only for intelligent citizens but for statesmen to ponder.

America, A Family Matter. By CHARLES W. GOULD. N. Y., Scribner, 1922. 196 p.

Human intelligence has waxed and waned and many factors caused its decline from the great age of Pericles to the darkness of the eighth century. The purpose of this book is to find the fundamental cause of this mental degradation, and the result is taken and applied to conditions now existing in our own country. When De Tocqueville wrote, there were seventeen million in this country and they were well on toward the conquest of nature east of the Mississippi. There are probably now forty million who belong to the old American stock which always stood for right and justice.

It is fortunate that a large proportion of those who have lately come to our shores do not seek naturalization or would not if not urged to do so by demagogues. They should be discouraged. The Filipinos, some ten million strong, are knocking at our gates. But there is no reason why utterly alien people, alien in spirit and in race, should constitute any part of our citizenry. No republic can stand that is not based on a people of homogeneous race, and as army tests showed, the ever lower intelligence and ever greater ignorance of those who have lately sought our shores are sure to undermine everything we cherish in our American institutions. If we admit everybody the Philistines will be upon us. We must repeal our naturalization laws, deafen our ears to the clamor of demagogues and muzzle humanitarianism. We owe it to our children to protect them from the hordes of the witless and millions of others who are mental children. This is the lesson that is taught by the study of the decline of the ancient civilizations for we are already well along the downward path. This thoughtful volume should be read and pondered by every intelligent American for it points out the gravest danger that now threatens our country.

The History of Medicine. By WALTER LIBBY. Boston, Houghton Mifflin, 1922. 425 p.

The author, with Dr. G. Sarton, is, I believe, the only academic representative of the history of science. His first modest little volume gave promise of something larger and better and this is the fulfillment of that promise. He begins with Egypt and Babylon and then has chapters on Hippocrates, medicine in ancient Rome, among the Arabs, Harvey, Syden-

ham, Hunter, Bischat, Von Baer, the cell theory, anesthetics, evolution, the founders of bacteriology, Lister and antiseptic surgery, the history of syphilis, preventive medicine in the tropics, and finally medical science in modern warfare. There are nine full-page pictures of pioneers. We believe this book will go far toward justifying the creation of this new department as a culture value which should make it not merely an addition to the history of philosophy but give it an independent place in our curriculum.

The Life and Work of Sir James Kay-Shuttleworth. By FRANK SMITH. London, Murray, 1923. 365 p.

The subject of this sketch was for decades more instrumental in bringing about the great reforms in English education than anyone else. Michael Sadler, in his introduction, calls him the chief architect of the present system. He was a child of the industrial revolution. His reading and thinking were largely in the field of social science and he early realized that the basis of English progress must be educational. This account of the man and his activities is most timely.

The Play Movement. A study of community recreation. By CLARENCE E. RAINWATER. U. of Chicago Press, 1921. 371 p.

This Chicago dissertation really adds little that is new to our knowledge of play, the author's elaborate definition of which is highly scholastic, as is, indeed, his treatment of the whole subject, which he divides into: origins of the movement (4), its sources (7), transitions (9), its trends (5), and his general conclusions. His material is overanalyzed and thus confusing. His conclusions are inane and his acquaintance with the history of the subject seems superficial for he summarizes the work of the few American writers on the subject in a phrase each and, to our mind, does very scant justice to the work of men like Henry Curtis. The impression that so often arises is thus renewed, that the work that emanates from the University of Chicago in education is *tendenziös* and that good work that is recognized tends to be in proportion, if not to its geographic at least to its psychological nearness to Chicago, while the European work, which has had a great influence in American theory, has a very meagre place.

The Wreck of Europe. By FRANCESCO NITTI. Indianapolis, Bobbs Merrill, 1922. 304 p.

This is the only frank account of the war, and still more of the events which have followed it in Europe, by a statesman and his book should be read by every intelligent American interested in European affairs for it is both fascinating and instructive from cover to cover. The author impresses us not only by his mastery of facts, contemporary and even of early history, but by his breadth of view, impartiality, and utter unreserve. He expresses in the roundest terms his utter contempt of both the Kaiser and the Czar, his high appreciation of the statesmanship of Lloyd George and Venizelos, his respect for Wilson and his Fourteen Points, but his condemnation of the Treaty, in which every one of these points was negated. He regrets that Germany was not given a full hearing at the peace conference, tells why he believes the Turks have not had a square deal and are better than they are painted, prophesies the downfall of the Greek advance made under Constantine after his return, deplores the excessive demands of France upon Germany, and thinks the loss of the latter's colonies and ships, her disarmament and dismemberment, should weigh in the determination of indemnities, etc. Thus he rises far above Irredentism. Although his spirit is optimistic one cannot conclude the book without the conviction that worse things are to come for continental Europe than have yet happened and that nations are far from being disposed to deal justly with each other.